DOS III SYSTEM GENERATION
(REV A)

BINARY TAPE	24307-60001
SOURCE TAPES	24307-80001
	24307-80002
	24307-80003
	24307-80004
	24307-80005
	24307-80006
	24307-80007
	24307-80008
	24307-80009
	24307-80010
	24307-80011
SOURCE LISTING	24307-90001

```
0001                    ASMB,A,B,C,L,N,X
** NO ERRORS*
```

```
0001                    ASMB,A,B,C,L,N,X
0002  00100                     ORG 100B
0003*
```

```
0005*****************************************************
0006*****************************************************
0007****************** - HIGH CORE - ********************
0008*                                                   *
0009*              SIO DRIVERS (TTY, PT, HSP)           *
0010*                                                   *
0011*****************************************************
0012*                       - IDENTS -                  *
0013*                       ----------                  *
0014*                                                   *
0015*                                                   *
0016*                                                   *
0017*                        -------                    *
0018*                        - LST -                    *
0019*****************************************************
0020*                                                   *
0021*                                                   *
0022*            LOAD, LINKAGE SUBROUTINES              *
0023*                                                   *
0024*                     DISK DRIVERS                  *
0025*                                                   *
0026*                                                   *
0027****************** - 10000 - ***********************
0028*                                                   *
0029*                                                   *
0030*            PROGRAM LOADING CONTROL                *
0031*                                                   *
0032*                                                   *
0033****************** - 6000 - ************************
0034*                                                   *
0035*                                                   *
0036*                I/O TABLE GENERATION               *
0037*                                                   *
0038*                   PARAMETER INPUT                 *
0039*                                                   *
0040*                                                   *
0041****************** - 4000 - ************************
0042*                                                   *
0043*                                                   *
0044*           RELOCATABLE PROGRAM INPUT               *
0045*                                                   *
0046*                 INITIALIZATION                    *
0047*                                                   *
0048*                                                   *
0049****************** - 2000 - ************************
0050*                                                   *
0051*                                                   *
0052*                    DATA AREAS                     *
0053*                                                   *
0054*                                                   *
0055*****************************************************
```

```
0057*
0058*
0059*  IDENT FORMAT
0060*
0061*  WORD 1: ID1 - NAME 1,2
0062*  WORD 2: ID2 - NAME 3,4
0063*  WORD 3: ID3 - NAME 5, USAGE FLAG
0064*  WORD 4: ID4 - COMMON LENGTH
0065*  WORD 5: ID5 - CURRENT DISK ADDRESS
0066*  WORD 6 (15): ID6 - M/S
0067*  WORD 6 (00-06): ID6 - TYPE
0068*  WORD  7: ID10 - DISK LENGTH, BG MAIN ADDRESS (BS ONLY)
0069*
0070*
0071*  LST FORMAT
0072*
0073*  WORD 1: LST1 - NAME 1,2
0074*  WORD 2: LST2 - NAME 3,4
0075*  WORD 3: LST3 - NAME 5, ORDINAL
0076*  WORD 4: LST4 - IDENT ADDRESS
0077*  WORD 5: LST5 - BP LINK ADDRESS
0078*
0079*
0080*  PROGRAM TYPES
0081*
0082*  0: SYSTEM RESIDENT
0083*  1: EXEC SUPERVISOR MODULES
0084*  2: RESERVED FOR FUTURE
0085*  3: USER MAIN
0086*  4: I/O DRIVER MODULES
0087*  5: USER SEGMENT
0088*  6: RELOCATABLE LIBRARY
0089* 10: RELOCATABLE BINARY
0090* 11: ASCII SOURCE STATEMENTS
0091* 12: BINARY DATA
0092* 13: ASCII DATA
0093* 14: ABSOLUTE BINARY
```

```
0095*
0096*  ERROR CODES
0097*
0098*  1: INVALID TTY REPLY TO INITIALIZATION PARAMETERS
0099*  2: CHECKSUM ERROR
0100*  3: RECORD OUT OF SEQUENCE
0101*  4: INVALID RECORD TYPE
0102*  5: DUPLICATE ENTRY POINTS
0103*  6: INVALID BP CODE IN PROGRAM
0104*  7: LST/IDENT OVERFLOW
0105*  8: DUPLICATE PROGRAM NAMES
0106*  9: PARAMETER NAME ERROR
0107*  10: PARAMETER TYPE ERROR
0108*  13: USER SEGMENT PRECEDES USER MAIN
0109*  15: PROGRAM LIST OVERFLOW (MORE THAN 64 SUB-PROGRAMS)
0110*  16: BP LINKAGE AREA OVERFLOW
0111*  17: DISK OVERFLOW (NEXT DISK ADDR EXCEEDS LAST AVAIL DISK ADDR)
0112*  18: MEMORY OVERFLOW
0113*  19: DBL RECORD ORDER/ PROGRAM OVERLAY
0114*  20: DBL LIST OVERFLOW (MORE THAN 675 DBL RECORDS)
0115*  21: '$CIC' NOT FOUND IN LOADER SYMBOL TABLE
0116*  22: DISK READ PARITY/DECODE ERROR
0117*  23: EQT ENTRY NOT ENTERED FOR DISC RESIDENT I/O DRIVER MODULE
0118*  24: INVALID CHANNEL NO. IN EQT RECORD
0119*  25: INVALID DRIVER NAME IN EQT RECORD
0120*  26: INVALID D,R,U OPERANDS IN EQT RECORD
0121*  27: INVALID DEVICE REFERENCE NO.
0122*  28: INVALID INTERRUPT REC CHANNEL NO.
0123*  29: INVALID INTERRUPT REC CHANNEL NO. ORDER
0124*  30: INVALID INTERRUPT ENTRY MNEMONIC
0125*  31: INVALID EQT NO. IN INT RECORD
0126*  33: INVALID ENTRY POINT
0127*  34: INVALID ABSOLUTE VALUE
0128*  35: BP INTERRUPT LOCATION OVERFLOW
0129*  36: INVALID TERMINATING OPERAND IN INT RECORD
```

```
0131*
0132                                SUP
0133  00000                 A       EQU 0
0134  00001                 B       EQU 1
0135  00100 124112                  JMP TRANS,I     BEGIN
0136  00101 000000          DRPTR   BSS 1           PT READER DRIVER ADDRESS
0137  00102 000000          DRKEY   BSS 1           KEYBOARD OUPUT DRIVER ADDRESS
0138  00103 000000          DRHSP   BSS 1           HS PUNCH DRIVER ADDRESS
0139  00104 000000          DRTTY   BSS 1           TELETYPE INPUT DRIVER ADDRESS
0140  00105 016000          FWAM    DEF END+1
0141  00106 000000          LWAM    BSS 1           END AVAIL. MEM - SET BY DRIVERS
0142  00107 000000          DRMAG   NOP
0143  00110 000000          LWSBP   NOP
0144*
0145  00111 007777          ANDBL   OCT 7777
0146  00112 002000          TRANS   DEF RTGEN       TRANSFER ADDR TO RTGEN
0147  00113 002334          AINPT   DEF INPUT       ADDRESS OF PROGRAM INPUT CODE
0148  00114 004137          IPARM   DEF IPARS       ADDR OF PARAMETER INITIALIZATION
0149  00115 004000          APARS   DEF PARAM       ADDRESS OF PARAMETER INPUT CODE
0150  00116 004153          AGNIO   DEF GENIO       ADDR OF I/O GENERATOR CODE
0151  00117 004753          AGETA   DEF GETAL       ADDR OF GETAL SUB.
0152  00120 005000          AGETN   DEF GETNA       ADDRESS OF GETNA SUB.
0153  00121 005037          AGETO   DEF GETOC       ADDRESS OF GETOC SUB.
0154  00122 005115          AGINI   DEF GINIT       ADDR OF GINIT SUB.
0155  00123 003236          AREPL   DEF REPLY
0156  00124 003264          AINER   DEF INERR
0157  00125 002141          AGTSC   DEF GETSC
0158  00126 006000          AFWAP   DEF FWENT       ADDR OF FWA BP LINKAGE CODE
0159  00127 000540          ADOUT   DEF DISKO       DISK OUTPUT DRIVER ADDRESS
0160  00130 010132          ALOAD   DEF LOAD        ADDRESS OF MAIN LOAD BEGIN
0161  00131 010144          ALODS   DEF LOADS       ADDRESS OF SUB-LOAD BEGIN
0162  00132 010072          ABPOT   DEF BPOUT       ADDR OF BP OUTPUT CODE
0163  00133 010030          ACLRT   DEF CLRLT       ADDR OF LOCAL LST CLEARING CODE
0164  00134 010000          AIDSN   DEF IDSCN       ADDR OF SCAN IDENT CODE
0165  00135 011167          ALABD   DEF LABDO       ADDR OF ABSOLUTE OUTPUT SECTION
0166  00136 011242          AREMD   DEF REMDO       ADDRESS OF REMAINING OUTPUT DRIV
0167  00137 011023          AGEND   DEF GENID       ADDR OF ID SEGMENT GENERATOR
0168  00140 011135          AOUTD   DEF OUTID       ADDR OF ID SEG OUTPUT CONTROL
0169  00141 010021          ANOTS   DEF NOTST       ADDR OF PROGRAMS-LOADED TEST
0170  00142 005142          AALOC   DEF ALLOC
0171  00143 007657          ASCBP   DEF SCNBP
0172  00144 010773          ASCOT   DEF SCOUT
0173  00145 015400          ABOOT   DEF START       ADDRESS OF BOOTSTRAP LOADER
0174  00146 015600                  DEF START+128
0175  00147 015726          ASBUF   DEF ASPBF       ADDRESS OF 9-WORD BUFFER IN BOOT
0176  00150 006010          TEMBF   DEF SLINK
0177  00151 006202          TEMBX   DEF SLINK+122
0178  00152 005123          ARESC   DEF RESCN       ASCII TO DEC CONV (0<(A)<15)
0179  00153 005326          AMS17   DEF MES17
0180  00154 003456          AMS32   DEF MES32
0181  00155 005332          AMS36   DEF MES36
0182  00156 001172          MES12   DEF MS12
0183  00157 001175          MES15   DEF MS15
0184  00160 001211          MES19   DEF MS19
0185  00161 001223          MES20   DEF MS20
0186  00162 001235          MES23   DEF MS23
```

```
0187   00163 012164   AIDSK DEF INDSK
0188   00164 002155   ACHJM DEF CHJMP
0189   00165 000730   AXIN  DEF XINST
0190   00166 012000   AOUT3 DEF OUT3
0191   00167 011267   APTCT DEF ISSPR
0192   00170 013447   APBC  DEF PBCHN
0193   00171 013450   APBD  DEF PBDMA
0194   00172 013502   APBC1 DEF PBC1
0195   00173 013564   APBC2 DEF PBC2
0196   00174 012033   ASTSC DEF SETSC
0197   00175 015562   ACNFG DEF CNFGR
0198   00176 015724   ADVAD DEF DVADR
0199   00177 015747   ADCHN DEF CHANL
0200   00200 015773   ACHNL DEF DCHAN      ADDR OF DISC IN BOOT
0201   00201 000212   DFN64 DEF N64
0202   00202 001350   DEF.  DEF .
0203   00203 015743   A#SCT DEF #SPTK
0204   00204 015744   A#SPC DEF #SPCY
0205   00205 015745   A#STN DEF #SPTN
0206   00206 015776   ABDRV DEF BDRV#
0207   00207 015772   ABHDM DEF BHM$K
0208   00210 013376   ALCD  DEF LCODE
0209   00211 000010   EXDEF OCT 10        BUFFER ADDRESS 10B
0210*
```

```
0212*                                                  BASE PAGE CONSTANTS
0213  00212 177700  N64    DEC -64
0214  00213 177766  N10    DEC -10
0215  00214 177767  N9     DEC -9
0216  00215 177770  N8     DEC -8
0217  00216 177771  N7     DEC -7
0218  00217 177772  N6     DEC -6
0219  00220 177773  N5     DEC -5
0220  00221 177774  N4     DEC -4
0221  00222 177775  N3     DEC -3
0222  00223 177776  N2     DEC -2
0223  00224 177777  N1     DEC -1
0224  00225 000000  ZERO   OCT 0
0225  00226 000001  P1     DEC 1
0226  00227 000002  P2     DEC 2
0227  00230 000003  P3     DEC 3
0228  00231 000004  P4     DEC 4
0229  00232 000005  P5     DEC 5
0230  00233 000006  P6     DEC 6
0231  00234 000007  P7     DEC 7
0232  00235 000010  P8     DEC 8
0233  00236 000011  P9     DEC 9
0234  00237 000012  P10    DEC 10
0235  00240 000021  P17    DEC 17
0236  00241 000100  P64    DEC 64
0237  00242 000017  M17    OCT 17
0238  00243 000037  M37    OCT 37
0239  00244 000077  M77    OCT 77
0240  00245 000177  M177   OCT 177
0241  00246 000377  M377   OCT 377
0242  00247 177400  M7400  OCT 177400
0243  00250 003777  M3777  OCT 3777
0244  00251 177700  M7700  OCT 177700
0245*                                                  PROGRAM CONSTANT FACTORS
0246  00252 177546  N280   DEC -154
0247  00253 177400  N256   DEC -256
0248  00254 177465  N203   DEC -203
0249  00255 177467  N201   DEC -201
0250  00256 177577  N129   DEC -129
0251  00257 177600  N128   DEC -128
0252  00260 177734  N36    DEC -36
0253  00261 177740  N32    DEC -32
0254  00262 177741  N31    DEC -31
0255  00263 177763  N13    DEC -13
0256  00264 177764  N12    DEC -12
0257  00265 000013  P11    DEC 11
0258  00266 000015  P13    DEC 13
0259  00267 000016  P14    DEC 14
0260  00270 000020  P16    DEC 16
0261  00271 000022  P18    DEC 18
0262  00272 000024  P20    DEC 20
0263  00273 000026  P22    DEC 22
0264  00274 000027  P23    DEC 23
0265  00275 000030  P24    DEC 24
0266  00276 000051  P41    DEC 41
0267  00245         P127   EQU M177
```

```
0268  00277 000200  P128   DEC 128
0269  00300 000312  P202   DEC 202
0270  00217         L6     EQU N6
0271  00216         L10    EQU N8
0272  00213         L12    EQU N10
0273  00301 177720  L60    OCT -60
0274  00302 176000  L2000  OCT -2000
0275  00303 177600  .N128  DEC -128
0276  00234         M7     EQU P7
0277  00304 000060  M60    OCT 60
0278  00305 000400  M400   OCT 400
0279  00306 076000  M0760  OCT 076000
0280  00307 174000  M1740  OCT 174000
0281  00310 002000  M2000  OCT 2000
0282  00311 002002  M2002  OCT 2002
0283  00312 002003  M2003  OCT 2003
0284  00313 002006  M2006  OCT 2006
0285  00314 002040  M2040  OCT 2040
0286  00315 002100  M2100  OCT 2100
0287  00316 177000  M7000  OCT 177000
0288  00317 177600  M7600  OCT 177600
0289  00320 001777  M1777  OCT 1777
0290  00321 077777  M7777  OCT 77777
0291  00322 000323  DPWRS  DEF *+1
0292  00323 023420         DEC 10000
0293  00324 001750         DEC 1000
0294  00325 000144         DEC 100
0295  00326 000012         DEC 10
0296  00327 000001         DEC 1
0297  00330 000331  OPWRS  DEF *+1
0298  00331 010000         OCT 10000
0299  00332 001000  B1000  OCT 1000
0300  00333 000100  M100   OCT 100
0301  00334 000010         OCT 10
0302  00335 000001         OCT 1
0303*
0304  00336 006000  DBADR  OCT 6000
0305  00337 000040  BLANK  OCT 040        BLANK
0306  00340 020000  UBLNK  OCT 20000      UPPER CHAR BLANK
0307  00341 025000  UPAST  OCT 25000
0308  00342 100000  MSIGN  OCT 100000     NEGATIVE SIGN
0309  00343 030000  SEEKX  OCT 030000
0310  00344 060000  CHCMD  OCT 060000
0311  00345 110000  INWRT  OCT 110000
0312  00346 111000  IPWRT  OCT 111000
0313  00347 110000  DWRT   OCT 110000
0314  00350 020000  DREAD  OCT 020000
0315  00351 020000  RACMD  OCT 020000     READ / READ ADDRESS COMMAND
0316  00352 000000  STATC  NOP
0317  00353 144000  TR200  OCT 144000
0318  00354 144400  TR201  OCT 144400
0319  00355 145000  TR202  OCT 145000
0320  00356 000314  LSTAC  DEC 204
0321  00357 022105  ASCEX  ASC 1,$E
0322  00360 054063  ASCX3  ASC 1,X3
0323  00361 000000  DOTA   NOP
```

```
0324   00362 000000   DSTAT NOP           CURRENT DISC STATUS
0325   00363 000000   LODSK NOP
0326   00364 000000   DEOF  NOP
0327   00365 000000   INHDM NOP
0328   00366 000000   INDRV NOP
0329   00367 000000   SVHDM NOP
0330   00370 000000   SVDRV NOP
0331   00371 000000   DSKAB NOP          ABSOLUTE OUTPUT DISC ADDR: T/S
0332   00372 000000   DSKSC NOP          SCRARCH OUTPUT DISC ADDR: T/S
0333   00373 000000   NLINK NOP          NUMBER OF USER LINKS
0334   00374 000040   NCONS DEC 32        # COMMONLY USED CONSTANTS
0335   00375 000234   NSYSC DEC 156        # SYSTEM VARIABLES
0336   00376 000000   NSYSL NOP           # SYSTEM LINKAGES
0337   00377 000000   UPLNK NOP          UPPER LIMIT OF LINKAGE AREA
0338   00400 000000   XPREL NOP
0339   00401 000000   MAXPX NOP          MAX EX MODULE PROG LENGTH
0340   00402 000000   IDFLG NOP           ID SEGMENT;/SECTOR COUNTER
0341   00403 000000   INFLG NOP           TEMBF CODE IN/OUT FLAG
0342   00404 000027   NSPTK DEC 23        #SECTORS/TRACK
0343   00405 000163   NSPCY DEC 115       #SECTORS/CYLINDER
0344   00406 177751   MSPTK DEC -23       NEGATIVE #SCTRS/TRK
0345   00407 000000   EQCNT NOP           EQUIPMENT TABLE COUNTER
0346   00410 000000   SSSAV NOP           SYSTEM SEARCH OF USER FILES
0347   00411 000000   AEQT  BSS 1         ADDRESS OF EQUIPMENT TABLE
0348   00412 000000   CEQT  BSS 1         NO, ENTRIES IN EQUIPMENT TABLE
0349*
0350   00413 000000   ASQT  BSS 1         ADDR OF DEVICE REFERENCE TABLE
0351   00414 000000   CSQT  BSS 1         NO, ENTRIES IN DEV, REF, TABLE
0352*
0353   00415 000000   AINT  BSS 1         ADDRESS OF INTERRUPT TABLE
0354   00416 000000   CINT  BSS 1         NO, ENTRIES IN INTERRUPT TABLE
0355*
0356   00417 000000   MCNT  BSS 3
0357*
0358   00422 000000   SAVMT BSS 1         ADDRESS OF MAG TAPE DRIVER
0359   00423 000000   PGMAD BSS 1         PROG INPUT DRIVER ADDRESS
0360   00424 000000   LIBAD BSS 1         LIBR INPUT DRIVER ADDRESS
0361   00425 000000   PINAD BSS 1         INPUT DRIVER ADDRESS
0362   00426 000000   NXCNT BSS 1         UNDEFINED SYMBOL COUNT
0363   00427 000000   TADBL BSS 1         CURRENT DBLST ADDRESS
0364   00430 000000   PADBL BSS 1         ADDRESS OF END OF DBLST
0365   00431 000000   ETFLG BSS 1         END TAPE FLAG = -1/0 = IGN/MAX
0366   00432 000000   CNFLG BSS 1         LB, UT END FLAG
0367   00433 000000   RIC   BSS 1         RECORD ID CODE
0368   00434 000000   SYM12 BSS 1         CHAR 1,2 ADDR
0369   00435 000000   SYM34 BSS 1         CHAR 3,4 ADDR
0370   00436 000000   SYM5  BSS 1         CHAR 5 ADDR
0371   00437 000000   SIDNT BSS 1          SAVE END OF IDENT TABLE
0372   00440 000000   SLST   BSS 1         SAVE END OF LST TABLE
```

```
0374*
0375*                                          CLEAR BUFFER WITH OCTAL ZEROES
0376*
0377*  THE BUFCL SUBROUTINE CLEARS A 128-WORD BUFFER WITH ZEROS.
0378*
0379*  CALLING SEQUENCE:
0380*    A = IGNORED
0381*    B = ADDRESS OF BUFFER
0382*    JSB BUFCL
0383*
0384*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0385*
0386  00441 000000  BUFCL NOP
0387  00442 060257        LDA N128
0388  00443 071064        STA WDCNT      SET BUFFER LENGTH = 128
0389  00444 002400        CLA
0390  00445 170001        STA B,I        CLEAR BUFFER WORD
0391  00446 006004        INB
0392  00447 035064        ISZ WDCNT      ALL WORDS CLEAR?
0393  00450 024445        JMP *-3        NO = CONTINUE CLEARING
0394  00451 124441        JMP BUFCL,I    RETURN
0395*
0396*                                          NEW LINE (CR,LF) ON TTY
0397*
0398*  THE SPACE SUBROUTINE IS USED TO SPACE UP THE TELEPRINTER.
0399*
0400*  CALLING SEQUENCE:
0401*    A = IGNORED
0402*    B = IGNORED
0403*    JSB SPACE
0404*
0405*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0406*
0407  00452 000000  SPACE NOP
0408  00453 002400        CLA            SET CHARACTER COUNT = ZERO
0409  00454 114102        JSB DRKEY,I    OUTPUT CR, LF ON TTY
0410  00455 124452        JMP SPACE,I    RETURN
0411*
0412*                                          PRINT: ERR XX
0413*
0414*  THE ERROR SUBROUTINE IS USED TO PRINT THE DIAGNOSTICS
0415*  FOR ALL ERROR MESSAGES.
0416*
0417*  CALLING SEQUENCE:
0418*    A = 2-DIGIT ASCII ERROR CODE
0419*    B = IGNORED
0420*    JSB ERROR
0421*
0422*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0423*
0424  00456 000000  ERROR NOP            PRINT ERROR MESSAGES
0425  00457 070473        STA AMERR+3    SET ERROR CODE INTO MESSAGE
0426  00460 060233        LDA P6
0427  00461 064470        LDB AMERR      AMERR = MESSAGE ADDRESS
0428  00462 114102        JSB DRKEY,I    PRINT ERROR MESSAGE
0429  00463 124456        JMP ERROR,I    RETURN
```

```
0430*
0431*                                                IRRECOVERABLE ERROR EXIT
0432*
0433  00464 000000  IRERR NOP
0434  00465 014456        JSB ERROR       PRINT ERROR MESSAGE
0435  00466 102000  HLT0  HLT 0B          WAIT - PROGRAM CAN NOT CONTINUE
0436  00467 024466        JMP *-1         IRRECOVERABLE ERROR
0437*
0438  00470 000471  AMERR DEF *+1
0439  00471 042522        ASC 3,ERR       ERROR MESSAGE = ERR + CODE
0440*
0441  00474 060477  LIBER LDA ERR14
0442  00475 014464        JSB IRERR
0443*
0444  00476 000000  LOLIB NOP             LOW LIBRARY DISC ADDRESS
0445  00477 030464  ERR14 ASC 1,14        ABSOL. CODE OVERRUN IN LIBRY
0446*
0447  00500 030067  ERR07 ASC 1,07        IDENT/LST OVERFLOW
0448*                                      RELOCATATION BASE TABLE
0449  00501 000000  CHKSM NOP
0450  00502 060262        LDA N31
0451  00503 070512        STA LBCNT
0452  00504 003400        CCA
0453  00505 120001        XOR B,I
0454  00506 006004        INB
0455  00507 034512        ISZ LBCNT
0456  00510 024505        JMP *-3
0457  00511 124501        JMP CHKSM,I
0458*
0459  00512 000000  LBCNT NOP
0460*
```

```
0462*
0463*                                          INCREMENT DISK ADDRESS
0464*
0465*  THE DISKA SUBROUTINE INCREMENTS THE CURRENT DISK ADDRESS
0466*  TO PROVIDE THE ADDRESS OF THE SUCCEEDING SECTOR,
0467*  WHETHER THAT SECTOR IS ON THE SAME TRACK OR THE FOLLOWING
0468*  TRACK.  IN ADDITION, THE DISKA SUBROUTINE CHECKS THAT
0469*  THE NEXT DISK ADDRESS IS VALID.
0470*
0471*  CALLING SEQUENCE:
0472*    A = CURRENT DISK ADDRESS
0473*    B = IGNORED
0474*    JSB DISKA
0475*
0476*  RETURN:
0477*    A = NEXT DISK ADDRESS
0478*    B = DESTROYED
0479*
0480  00513 000000  DISKA NOP
0481  00514 002004        INA
0482  00515 070001        STA B
0483  00516 010246        AND M377
0484  00517 050405        CPA NSPCY
0485  00520 024523        JMP  *+3
0486  00521 060001        LDA  B
0487  00522 124513        JMP DISKA,I
0488  00523 020001        XOR B
0489  00524 040305        ADA M400
0490  00525 070001        STA B
0491  00526 005727        BLF,BLF
0492  00527 055077        CPB DSIZE
0493  00530 024532        JMP DKERR
0494  00531 124513        JMP DISKA,I
0495  00532 061253  DKERR LDA ERR17     SET CODE FOR INSUFFICIENT DISK
0496  00533 014464        JSB IRERR     IRRECOVERABLE ERROR EXIT
0497*
0498*                                          DISK INPUT DRIVER
0499*
0500*  THE DISKI SUBROUTINE CONTROLS THE INPUT FROM THE DISK.
0501*  IT ADDS THE DIRECTION BIT TO THE CORE ADDRESS, AND
0502*  CONTAINS THE ERROR RECOVERY PROCEDURE IF READ PARITY
0503*  OR DECODE ERRORS ARE DETECTED ON READ.  FOLLOWING DETECTION
0504*  OF SUCH AN ERROR, 9 ADDITIONAL ATTEMPTS TO READ THE
0505*  SPECIFIED SECTOR WILL BE MADE.  IF THESE FAIL, THE DISK ADDRESS
0506*  AND THE CORE ADDRESS ARE DISPLAYED IN THE A AND B REGISTERS
0507*  AND THE COMPUTER HALTS.  BY PRESSING RUN, 10 ADDITIONAL
0508*  ATTEMPTS TO READ THE SECTOR WILL BE MADE.
0509*
0510*  CALLING SEQUENCE:
0511*    A = DISK ADDRESS
0512*    B = CORE ADDRESS
0513*    JSB DISKI
0514*
0515*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0516*
0517  00534 000000  DISKI NOP
```

```
0518  00535 044342          ADB MSIGN       SET SIGN = 1
0519  00536 014570          JSB DIO         READ FROM DISC
0520  00537 124534          JMP DISKI,I
0521*
0522*                                        DISK OUTPUT DRIVER
0523*
0524*  THE DISKO SUBROUTINE CONTROLS ALL OUTPUT TO THE
0525*  DISK.  IT ADDS THE DIRECTION BIT TO THE CORE ADDRESS, AND CONTAIN
0526*  THE ERROR RECOVERY PROCEDURE IF DISK ERRORS ARE DETECTED.
0527*  FOLLOWING EXECUTION OF THE DISK WRITE, THE SECTOR IS
0528*  IMMEDIATELY READ BACK TO TEST FOR ERRORS.  IF ERRORS ARE DETECTED
0529*  THIS PROCEDURE IS REPEATED (SEE RECOVERY FOR DISKI).
0530*
0531*  CALLING SEQUENCE:
0532*    A = DISK ADDRESS
0533*    B = CORE ADDRESS
0534*    JSB DISKO
0535*
0536*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0537*
0538  00540 000000  DISKO NOP
0539  00541 014570        JSB DIO         WRITE ON DISC
0540*
0541  00542 102502  CHECK LIA 2
0542  00543 002002        SZA
0543  00544 024744        JMP TRNON
0544  00545 061150        LDA DCMND
0545  00546 014633        JSB SEEK
0546*
0547  00547 060257        LDA N128        * CONVERT NEGATIVE
0548  00550 003004        CMA,INA         *  . WORD COUNT
0549  00551 040245        ADA M177        *
0550  00552 010317        AND M7600       *
0551  00553 001727        ALF,ALF         *     TO
0552  00554 001200        RAL             *   POSITIVE SECTOR COUNT
0553  00555 102600  DSC1  OTA 0           OUTPUT SECTOR COUNT
0554  00556 103700  DSC2  STC 0,C           TO DATA CHANNEL
0555  00557 060344        LDA CHCMD       LOAD CHECK DATA COMMAND
0556  00560 031110        IOR DRV#        INCLUDE DRIVE#
0557  00561 106701        CLC 1
0558  00562 102601        OTA 1           OUTPUT CHECK DATA CMND
0559  00563 103701        STC 1,C           TO COMMAND CHANNEL
0560  00564 102301        SFS 1
0561  00565 024564        JMP *-1
0562  00566 014673        JSB STAT
0563  00567 124540  OEXT  JMP DISKO,I
0564*
0565*                                        COMMON I/O DISK DRIVER
0566*
0567*  THE  DIO  SUBROUTINE IS THE MAIN DISC INPUT/OUTPUT
0568*  DRIVER.  IT SETS UP THE MEMORY ADDRESS REGISTER, THE
0569*  WORD COUNT REGISTER, AND THE DISK ADDRESS.  FOLLOWING THESE,
0570*  IT INITIATES THE TRANSFER, AND WAITS UNTIL THE TRANSFER
0571*  IS COMPLETE (BY TESTING THE DISK STATUS WORD).  IN THE CASE OF
0572*  A DISK READ, IT TESTS FOR READ PARITY AND DECODE ERRORS.
0573*
```

```
0574*  CALLING SEQUENCE:
0575*    A = DISK ADDRESS (WITH DIRECTION BIT)
0576*    B = CORE ADDRESS (WITH DIRECTION BIT)
0577*    JSB DIO
0578*
0579  00570 000000  DIO   NOP
0580  00571 071150        STA DCMND     SAVE DISC ADDRESS
0581  00572 075151        STB MADDR     SAVE CORE ADDRESS
0582*
0583  00573 060350        LDA DREAD     SET UP CONFIGURED
0584  00574 006021        SSB,RSS         READ / WRITE
0585  00575 060347        LDA DWRT        COMMAND
0586  00576 031110  DISKC IOR DRV#
0587  00577 070361        STA DOTA
0588*
0589  00600 060213  DISKE LDA N10       SET FOR 10 RE-TRY
0590  00601 071147        STA EDCNT       IF ERROR
0591*
0592  00602 060257  DISKD LDA N128      "A" = WORD COUNT
0593  00603 014606        JSB DMA       PERFORM DMA TRANSFER
0594  00604 014673        JSB STAT      CHECK STATUS
0595  00605 124570        JMP DIO,I
0596*
0597*  COMMON DMA TRANSFER ROUTINE. TRANSFER IS ALWAYS
0598*    TO OR FROM CORE ADDRESS IN MADDR,DISC ADDRESS
0599*    IN DCMND.
0600*
0601*  CALLING SEQUENCE:
0602*    DOTA = CONFIGURED DISC COMMAND
0603*    "A"  = # WORDS FOR DMA TRANSFER
0604*
0605  00606 000000  DMA   NOP
0606  00607 065151        LDB MADDR
0607  00610 106702        CLC 2         PREPARE TO SET MEM ADDR REG
0608  00611 106602        OTB 2         SET MEM ADDR IN MAR
0609  00612 102702        STC 2         PREPARE TO SET WORD COUNT REG
0610*
0611  00613 102602        OTA 2         SET WORD COUNT IN WCR
0612*
0613  00614 061150        LDA DCMND
0614  00615 014633        JSB SEEK
0615*
0616  00616 060361        LDA DOTA      GET DISC READ/WRITE COMMAND
0617  00617 102601        OTA 1         OUTPUT TO COMMAND CHANNEL
0618  00620 001710        ALF,SLA       CHECK IF READ OR WRITE
0619  00621 102100  DSK11 STF 0          -WRITE, SET FLAG ON DATA CHNL
0620  00622 002011        SLA,RSS
0621  00623 103700  DSK12 STC 0,C        -READ, SET CNTRL ON DATA CHNL
0622  00624 106701        CLC 1
0623  00625 103706        STC 6,C       INITIATE DMA
0624  00626 103701        STC 1,C       INITIATE DATA TRANSFER
0625  00627 102301        SFS 1         WAIT FOR
0626  00630 024627        JMP *-1         TRANSFER COMPLETE
0627  00631 106706        CLC 6
0628  00632 124606        JMP DMA,I
0629*
```

```
0630   00633 000000  SEEK   NOP
0631   00634 001727         ALF,ALF        ROTATE TRACK# TO LO BITS
0632   00635 010246         AND M377         AND ISOLATE
0633   00636 102600  DSK1   OTA 0          OUTPUT TRACK#
0634   00637 103700  DSK2   STC 0,C          TO DATA CHANNEL
0635   00640 064343         LDB SEEKX      LOAD SEEK COMMAND
0636   00641 045110         ADB DRV#       INCLUDE DRIVE#
0637   00642 050356         CPA LSTAC      CURRENT TRK = LAST TRK ACCESSED?
0638   00643 044342  ALTSK  ADB MSIGN        -YES, ALTER TO ADDRESS CMND
0639   00644 070356         STA LSTAC      UPDATE LAST TRACK ACCESSED
0640   00645 106701         CLC 1
0641   00646 106601         OTB 1          OUTPUT SEEK/ADDRESS CMND
0642   00647 103701         STC 1,C          TO COMMAND CHANNEL
0643*
0644   00650 061150         LDA DCMND      GET DISK ADDRESS
0645   00651 010246         AND M377       ISOLATE SCTR#
0646   00652 006401         CLB,RSS        *
0647   00653 006004         INB            * COMPUTE
0648   00654 040406         ADA MSPTK      *   PHYSICAL
0649   00655 002021         SSA,RSS        *   HEAD/SCTR
0650   00656 024653         JMP *-3        *     FROM
0651   00657 040404         ADA NSPTK      *   LOGICAL SCTR#
0652   00660 005727         BLF,BLF        *     AND
0653   00661 045111         ADB HDMSK      *   HEAD MASK
0654   00662 030001         IOR B          *
0655   00663 102300  DSK3   SFS 0          WAIT FOR DATA CHANNEL
0656   00664 024663         JMP *-1          TO ACCEPT TRACK#
0657   00665 102600  DSK4   OTA 0          OUTPUT HEAD/SECTOR
0658   00666 103700  DSK5   STC 0,C          TO DATA CHANNEL
0659   00667 102301         SFS 1          WAIT FOR
0660   00670 024667         JMP *-1          SEEK COMPLETION
0661   00671 014673         JSB STAT
0662   00672 124633         JMP SEEK,I
0663*
0664   00673 000000  STAT   NOP
0665   00674 102106         STF 6
0001   00675 103700  DSK6   STC 0,C
0002   00676 061110         LDA DRV#
0003   00677 030352         IOR STATC
0004   00700 106701         CLC 1
0005   00701 102601         OTA 1          OUTPUT STATUS CMND
0006   00702 103701         STC 1,C          TO COMMAND CHANNEL
0007   00703 102300  DSK7   SFS 0
0008   00704 024703         JMP *-1
0009   00705 106701         CLC 1          CLEAR COMMAND CHANNEL
0010   00706 102500  DSK8   LIA 0          LOAD STATUS FROM DATA CHANNEL
0011   00707 070362         STA DSTAT
0012   00710 002111         CLE,SLA,RSS    CHECK IF ANY ERROR
0013   00711 124673         JMP STAT,I       -NO, EXIT
0014*
0015   00712 001221         RAL,ARS
0016   00713 002021         SSA,RSS        FIRST SEEK?
0017   00714 001333         RAR,SLA,RAR    DATA ERROR?
0018   00715 024726         JMP RETRY        -YES
0019   00716 001310         RAR,SLA        CHECK IF PCI/DCI
0020   00717 024742         JMP FLGCY
```

```
0021  00720 060267  DSKNR LDA P14
0022  00721 064770        LDB MES33
0023  00722 114102  DSKMS JSB DRKEY,I
0024  00723 061150        LDA DCMND
0025  00724 064362        LDB DSTAT
0026  00725 102032        HLT 32B
0027*
0028  00726 035147  RETRY ISZ EDCNT      TRIED 10 TIMES?
0029  00727 024602        JMP DISKD       NO= TRY AGAIN
0030  00730 061256  XINST LDA ERR22      OUTPUT ERROR MESSAGE
0031  00731 014456        JSB ERROR       (ERR22 = NORMAL I/O
0032  00732 061150        LDA DCMND        ERR12 = INITIALIZING
0033  00733 064362        LDB DSTAT       THEN HALT
0034  00734 102022        HLT 22B         BEGORE TRYING AGAIN
0035*
0036  00735 002400        CLA             RESEEK
0037  00736 014633        JSB SEEK        AFTER ERROR
0038  00737 060355        LDA TR202
0039  00740 014633        JSB SEEK
0040*
0041  00741 024600        JMP DISKE       RESET ERROR COUNTER & GO
0042*
0043  00742 001310  FLGCY RAR,SLA         CHECK IF DCI
0044  00743 024747        JMP DEFCT       -DEFECTIVE CYLINDER
0045*
0046  00744 060276  TRNON LDA P41
0047  00745 164164        LDB AMS32,I
0048  00746 024722        JMP DSKMS       OUTPUT 'PROTECTED' MESSAGE
0049*
0050  00747 060351  DEFCT LDA RACMD       CONFIGURE READ (READ ADDRESS IF
0051  00750 031110        IOR DRV#        ISS) COMMAND FOR INPUTTING
0052  00751 070361        STA DOTA        ALT. TRACK FOR DEFECT. CYL.
0053*
0054  00752 060223        LDA N2          READ TWO WORDS
0055  00753 014606        JSB DMA         PERFORM DMA TRANSFER
0056*
0057  00754 061151        LDA MADDR       GET ALTERNATE TRACK
0058  00755 001265        RAL,CLE,ERA     NUMBER FROM
0059  00756 160000        LDA A,I         CORE BUFFER
0060  00757 000000  ALTTR NOP             CHANGED TO ALF,ALF IF ISS DISC,
0061  00760 010247        AND M7400       SINCE TRACK # IS IN LOW 8 BITS
0062  00761 070001        STA B           FOR ISS,HI 8 BITS FOR 7900
0063*
0064  00762 061150        LDA DCMND       GET NEW DISC TRACK/SECTOR
0065  00763 010246        AND M377        FROM NEW TRACK & OLD SECTOR
0066  00764 030001        IOR B
0067  00765 071150        STA DCMND
0068*
0069  00766 060350        LDA DREAD       RESET DOTA TO READ FROM
0070  00767 024576        JMP DISKC       ALTERNATE TRACK
0071*
0072  00770 000771  MES33 DEF *+1
0073  00771 042111        ASC 7,DISC NOT READY
0074*
0075  00127         DVORG EQU ADOUT
0076  00770         DVEND EQU MES33
```

```
0077*
0078   01000 054505  YES   ASC 1,YE
0079   01001 047117  NO     ASC 1,NO
0080*
0081*                                        CONVERT A TO ASCII AT B
0082*
0083*  THE CONVD SUBROUTINE CONVERTS THE CONTENTS OF A
0084*  INTO ASCII (DECIMAL OR OCTAL) AT THE LOCATION SPECIFIED
0085*  BY B.  THE CONVERTED RESULT REQUIRES 3 WORDS, AND IS
0086*  IN THE FORMAT:  XXXXX, WITH A SPACE IN THE FIRST POSITION.
0087*
0088*  CALLING SEQUENCE:
0089*    A = NO. TO BE CONVERTED.  IF THE SIGN OF A IS POS.,
0090*        THE CONVERSION IS TO BE IN OCTAL;  IF NEGATIVE,
0091*        IN DECIMAL.
0092*    B = ADDRESS OF CORE LOCATION FOR CONVERTED RESULT
0093*    JSB CONVD
0094*
0095*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0096*
0097   01002 000000  CONVD NOP
0098   01003 075321        STB CURAT      SET MESSAGE ADDRESS
0099   01004 064330        LDB OPWRS      GET ADDR OF OCTAL POWERS
0100   01005 002020        SSA            SKIP IF OCTAL CONV REQUIRED
0101   01006 064322        LDB DPWRS      GET ADDRESS OF DECIMAL POWERS
0102   01007 075171        STB RANAD      SET POWER RANGE ADDRESS
0103   01010 002021        SSA,RSS        SKIP IF NEGATIVE (DECIMAL)
0104   01011 003004        CMA,INA        CONVERT NUMBER TO NEGATIVE
0105   01012 070001        STA B          PUT NUMBER IN B (REMAINDER)
0106   01013 060223        LDA N2
0107   01014 071322        STA TCNT       SET CONVERSION COUNTER
0108   01015 015033        JSB GETD       GET FIRST DIGIT
0109   01016 030340        IOR UBLNK      ADD BLANK TO FIRST CHAR
0110   01017 171321        STA CURAT,I    SAVE FIRST BLANK, CHARACTER
0111   01020 035321        ISZ CURAT      INCR MESSAGE ADDRESS
0112   01021 015033  NEXTD  JSB GETD      GET NEXT DIGIT
0113   01022 001727        ALF,ALF        ROTATE TO UPPER
0114   01023 171321        STA CURAT,I    SAVE UPPER CHARACTER
0115   01024 015033        JSB GETD       GET NEXT DIGIT
0116   01025 131321        IOR CURAT,I    ADD UPPER CHAR
0117   01026 171321        STA CURAT,I    SAVE NEXT 2 CHARACTERS
0118   01027 035321        ISZ CURAT      INCR MESSAGE ADDRESS
0119   01030 035322        ISZ TCNT       SKIP = 5 DIGITS IN
0120   01031 025021        JMP NEXTD      NO = CONTINUE WITH NEXT DIGIT
0121   01032 125002        JMP CONVD,I    YES = RETURN
0122*
0123*                                        GET DIGIT FOR CONVD
0124*
0125*  GETD PROVIDES THE ASCII CHARACTERS FOR CONVD.
0126*
0127*  CALLING SEQUENCE:
0128*    A = IGNORED
0129*    B = REMAINDER
0130*    JSB GETD
0131*
0132*  RETURN:
```

```
0133*     A = ASCII DIGIT
0134*     B = IGNORED
0135*
0136  01033 000000  GETD  NOP
0137  01034 002400        CLA
0138  01035 145171  INCRA ADB RANAD,I    ADD POWER
0139  01036 007026        CMB,SSB,INB,SZB   SKIP = TRY NEXT HIGHER DIGIT
0140  01037 025043        JMP *+4         DIGIT FOUND
0141  01040 002004        INA             INCR DIGIT
0142  01041 007004        CMB,INB         RESTORE REMAINDER TO NEGATIVE
0143  01042 025035        JMP INCRA       TRY HIGHER DIGIT
0144  01043 145171        ADB RANAD,I     ADD POWER
0145  01044 007004        CMB,INB         RESTORE REMAINDER
0146  01045 035171        ISZ RANAD       INCR POWER LIST ADDRESS
0147  01046 030304        IOR M60         CONVERT TO ASCII
0148  01047 125033        JMP GETD,I      RETURN WITH DIGIT IN A
0149*                                     CLEAR PROGRAMS-LOADED FLAGS
```

```
0151*
0152  01050 001051  RBTAD DEF **+1
0153  01051 000000        OCT 0          ABSOLUTE PROGRAM BASE
0154  01052 000000  TPREL OCT 0          CURRENT PROG BASE ADDRESS
0155  01053 000000        OCT 0          BP RELOCATION ADDRESS
0156  01054 000000  COMAD OCT 0          CURRENT COMMON RELOCATION BASE
0157*
0158  01055 001556  ALBUF DEF LBUF
0159  01056 005374  ADBUF DEF DBUF
0160  01057 003600  AIBUF DEF IBUF
0161  01060 001323  ATBUF DEF TBUF
0162  01061 005575  PLAD  DEF PLIST
0163  01062 001513  AMLST DEF MLIST
0164  01063 001520  AMEM5 DEF MLIST+5
0165*
0166  01064 000000  WDCNT OCT 0          TEMPORARY WORD COUNTER
0167*
0168  01065 011366  BLST  DEF LST        ADDR OF FIRST LST ENTRY
0169  01066 000000  TLST  BSS 1          CURRENT LST ADDR
0170  01067 000000  PLST  BSS 1          ADDR OF NEXT AVAILABLE ENTRY
0171*
0172  01070 000000  BIDNT BSS 1          ADDR OF FIRST IDENT
0173  01071 000000  TIDNT BSS 1          CURRENT IDENT
0174  01072 000000  PIDNT BSS 1          NEXT AVAILABLE IDENT
0175*
0176  01073 000000  MAXC  BSS 1          MAX CHAR COUNT
0177  01074 000000  TCHAR BSS 1          TEMPORARY CHAR SAVE AREA
0178  01075 000000  OCTNO BSS 1          OCTAL DIGIT
0179*
0180  01076 000000  SCODE BSS 1          SYSTEM GEN. CODE
0181  01077 000000  DSIZE BSS 1          DISK SIZE = NO. OF TRACKS
0182  01100 000000  DCHNL BSS 1          DISK I/O CHANNEL NO. (OCTAL)
0183  01101 000000  UDSC  BSS 1          USER DISC SUBCHANNEL
0184  01102 000000  TBCHN BSS 1          TIME BASE GENERATOR CHNL
0185  01103 000000  LWASM BSS 1          LAST WORD SYS AVAIL MEM
0186  01104 000000  PARAD BSS 1          PARAMETER INPUT DRIVER ADDRESS
0187  01105 000000  COMPT BSS 1          COMPUTER IDENTIFICATION
0188  01106 000000  SYSCH BSS 1          SYSTEM SUBCHANNEL
0189  01107 000000  SCNO  BSS 1          # OF SUBCHANNELS ON SYSTEM
0190  01110 000000  DRV#  BSS 1          SYSTEM DRIVE#
0191  01111 000000  HDMSK BSS 1          SYSTEM HEAD# BIT
0192  01112 000000  PICHN BSS 1          PRIV INT CARD CHANNEL
0193*
0194  01113 000000  DERCN BSS 1          DISK ERROR COUNTER
0195  01114 000000  DSKAD BSS 1          CURRENT DISK ADDRESS
0196  01115 000000  PLFLG BSS 1          PROGRAM LOAD. FLAG = -1/0 = L/NL
0197  01116 000000  DSCNT BSS 1          DISK SEGMENT SECTOR COUNT
0198*
0199  01117 000000  ID1   BSS 1          IDENT 1 ADDR: NAME 1,2
0200  01120 000000  ID2   BSS 1          IDENT 2 ADDR: NAME 3,4
0201  01121 000000  ID3   BSS 1          IDENT 3 ADDR: NAME 5, USAGE FLAG
0202  01122 000000  ID4   BSS 1          IDENT 4 ADDR: COMMON LENGTH
0203  01123 000000  ID5   BSS 1          IDENT 5 ADDR: CURRENT DISK ADDR
0204  01124 000000  ID6   BSS 1          IDENT 6 ADDR: M/S,PRIORITY,TYPE
0205  01125 000000  ID10  BSS 1          IDENT 10 ADDR: LIB LGTH/BS MAIN
0206*
```

```
0207  01126 000000  LST1   BSS 1          WORD 1 ADDR (LST)
0208  01127 000000  LST2   BSS 1          WORD 2 ADDR (LST)
0209  01130 000000  LST3   BSS 1          WORD 3 ADDR (LST)
0210  01131 000000  LST4   BSS 1          WORD 4 ADDR (LST)
0211  01132 000000  LST5   BSS 1          WORD 5 ADDR (LST)
0212*
0213  01133 000000  NXFLG  BSS 1          ENT/EXT FLAG = -1/0
0214  01134 000000  EXCNT  BSS 1          SYMBOL COUNTER
0215*
0216  01135 000000  CURAD  BSS 1          CURRENT DBUF ADDRESS
0217  01136 000000  DCNT   BSS 1          CURRENT DBUF COUNT
0218  01137 005377  ADLBL  DEF DBUF+3
0219  01140 005433  ADCHK  DEF DBUF+31
0220  01141 005474  SNXTS  DEF DBUF+64
0221  01142 005573  SBLBL  DEF DBUF+127
0222*
0223  01143 000000  LRBP   BSS 1          LOWER RESIDENT BP BOUND
0224  01144 000000  URBP   BSS 1          UPPER RESIDENT BP BOUND
0225  01145 000000  LBBP   BSS 1          LOWER BACKGROUND BP BOUND
0226  01146 000000  UBBP   BSS 1          UPPER BACKGROUND BP BOUND
0227*
0228  01147 000000  EDCNT  BSS 1          CURRENT DISK ERROR COUNT
0229  01150 000000  DCMND  BSS 1          DISK COMMAND/ADDRESS
0230  01151 000000  MADDR  BSS 1          MEMORY COMMAND/ADDRESS
0231  01152 000000  TEMPP  BSS 1          CURRENT ABSOLUTE WORD
0232  01153 000000  ABCNT  BSS 1          CURRENT ABSOLUTE DISPLACEMENT
0233  01154 000000  DSKMN  BSS 1          INITIAL MAIN DISK ADDRESS
0234  01155 000000  BSSDP  BSS 1          INITIAL DISK RES MAIN BSS DISP
0235  01156 000000  PRENT  BSS 1          PRIMARY ENTRY POINT
0236  01157 000000  DBLAD  BSS 1          CURRENT DBL ADDRESS
0237  01160 000000  REKEY  BSS 1          INSTRUCTION TYPE BYTE
0238  01161 000000  INSCN  BSS 1          INSTRUCTION TYPE COUNTER
0239  01162 000000  EXORD  BSS 1          EXT ORDINAL
0240  01163 000000  INSTR  BSS 1          CURRENT INSTRUCTION
0241  01164 000000  PAGNO  BSS 1          CURRENT PAGE NO.
0242  01165 000000  OPRND  BSS 1          CURRENT OPERAND
0243  01166 000000  PLGTH  BSS 1          PROGRAM LENGTH
0244  01167 000000  LOWER  BSS 1          LOWER BP LST BOUND
0245  01170 000000  UPPER  BSS 1          UPPER BP LST BOUND
0246  01171 000000  RANAD  BSS 1          CURRENT POWER RANGE ADDRESS
0247*
0248  01172 051531  MS12   ASC 3,SYSTEM
0249  01175 042530  MS15   ASC 12,EXEC SUPERVISOR MODULES
0250  01211 044457  MS19   ASC 10,I/O DRIVER MODULES
0251  01223 052523  MS20   ASC 10,USER SYSTEM PROGRAMS
0252  01235 025123  MS23   ASC 11,*SYSTEM STORED ON DISC
0253*
0254  01250 030462  ERR12  ASC 1,12       DISC ERROR DURING INITIALIZATION
0255  01251 030465  ERR15  ASC 1,15       PROGRAM LST FULL
0256  01252 030466  ERR16  ASC 1,16       USER LINKAGE AREA FULL
0257  01253 030467  ERR17  ASC 1,17       DISC OVERFLOW
0258  01254 030470  ERR18  ASC 1,18       MEMORY OVERFLOW
0259  01255 030471  ERR19  ASC 1,19       INVALID DBL ORDER/PROGRAM OVERLA
0260  01256 031062  ERR22  ASC 1,22       DISC READ PARITY/DECODE ERROR
0261*
0262  01257 001260  MES16  DEF *+1
```

```
0263  01260 040514          ASC 5,ALLOW :SS?
0264  01265 001266  MES22    DEF *+1
0265  01266 024116          ASC 3,(NONE)
0266  01271 001273  MES34    DEF SYMES
0267  01272 001277  MES35    DEF SYMES+4
0268  01273 046127  SYMES    ASC 4,LWA SYS
0269  01277 000000          NOP
0270  01300 000000          NOP
0271  01301 000000          NOP
0272  01302 001303  MES38    DEF *+1
0273  01303 043127          ASC 5,FWA USER?
0274*
0275  01310 001311  CARET    DEF *+1
0276  01311 005015          OCT 5015
0277*
0278  01312 103004  HLT4     HLT 4,C
0279  01313 103005  HLT5     HLT 5,C
0280  01314 020040  BLNKS    OCT 20040       BLANKS
0281  01315 020052  BLAST    OCT 20052       BLANK, ASTERISK
0282  01316 024000  ULPAR    OCT 24000       UPPER LEFT PAREN
0283  01317 024440  RPARB    OCT 24440       RIGHT PAREN, BLANK
0284  01320 051502  ASCSB    ASC 1,SB
0285*
0286  01321 000000  CURAT    BSS 1           CURRENT TBUF ADDRESS
0287  01322 000000  TCNT     BSS 1           CURRENT TBUF COUNT
0288  01323 000000  TBUF     BSS 4           TEMPORARY BUFFER
0289*
0290*  THE INIDX AND IDX SUBROUTINES ARE USED TO SET THE CURRENT
0291*  ADDRESSES FOR THE ENTRY IN THE PROGRAM IDENTIFICATION
0292*  BLOCK TABLE (IDENT).  THE ADDRESS OF THE NEXT ENTRY
0293*  IN THE IDENT TABLE IS CONTAINED IN TIDNT.  ON RETURN FROM
0294*  IDX, TIDNT CONTAINS THE ADDRESS OF THE NEXT AVAILABLE
0295*  ENTRY IN IDENT.  THE ADDRESS OF THE FIRST ENTRY IS CONTAINED
0296*  IN BIDNT AND THE ADDRESS OF THE END OF IDENT IS CONTAINED
0297*  IN PIDNT.
0298*
0299*  IF THE NEXT IDENT ENTRY OVERFLOWS INTO THE LAST LST ENTRY,
0300*  IDX PRINTS A DIAGNOSTIC AND EXITS TO THE IRRECOVERABLE ERROR
0301*  SUBROUTINE.
0302*
0303*                                  SET INITIAL IDENT ADDRESS
0304*
0305*  INIDX SETS THE ADDRESS OF THE FIRST ENTRY IN THE IDENT
0306*  TABLE AS THE CURRENT ADDRESS.
0307*
0308*  CALLING SEQUENCE:
0309*    A = IGNORED
0310*    B = IGNORED
0311*    JSB INIDX
0312*
0313*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0314*
0315  01327 000000  INIDX    NOP
0316  01330 061070          LDA BIDNT       BIDNT = INITIAL IDENT ADDRESS
0317  01331 071071          STA TIDNT       SET CURRENT IDENT ADDRESS
0318  01332 125327          JMP INIDX,I     RETURN
```

```
0319*
0320*                                        SET IDENT ADDRESSES FROM TIDNT
0321*  IDX SETS THE ADDRESSES OF THE CURRENT 10-WORD ENTRY IN THE
0322*  IDENT TABLE FROM THE ADDRESS OF THE CURRENT ENTRY (TIDNT).
0323*
0324*  CALLING SEQUENCE:
0325*    A = IGNORED
0326*    B = IGNORED
0327*    JSB IDX
0328*
0329*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0330*  (N+1): CURRENT IDENT ADDRESSES ARE THE ADDRESSES
0331*         OF THE NEXT AVAILABLE IDENT ENTRY, OR THE
0332*         END OF THE IDENT TABLE HAS BEEN REACHED.
0333*  (N+2): CURRENT IDENT ENTRY ADDRESSES (NOT END OF IDENT)
0334*
0335  01333 000000  IDX   NOP
0336  01334 061071        LDA TIDNT     TIDNT = CURRENT IDENT ADDRESS
0337  01335 051072        CPA PIDNT     END OF IDENT LIST?
0338  01336 002001        RSS           YES - RETURN TO NEXT INSTRUCTION
0339  01337 035333        ISZ IDX       SET RETURN ADDRESS FOR N+2
0340  01340 071117        STA ID1       SET ADDRESS OF NAME 1,2
0341  01341 002004        INA
0342  01342 071120        STA ID2       SET ADDRESS OF NAME 3,4
0343  01343 002004        INA
0344  01344 071121        STA ID3       SET ADDRESS OF NAME 5, USE FLAG
0345  01345 002004        INA
0346  01346 071122        STA ID4       SET ADDRESS OF COM/PROG LENGTH
0347  01347 002004        INA
0348  01350 071123        STA ID5       SET ADDRESS OF CURRENT DISK ADDR
0349  01351 002004        INA
0350  01352 071124        STA ID6       SET ADDRESS OF M/S,PRIOR/DISK,TY
0351  01353 002004        INA
0352  01354 071125        STA ID10      SET MAIN IDENT ADDR FOR BS
0353  01355 061071        LDA TIDNT     TIDNT = CURRENT IDENT ADDR
0354  01356 064000        LDB A
0355  01357 003004        CMA,INA
0356  01360 041067        ADA PLST      PLST = CURRENT END LST ADDR
0357  01361 002021        SSA,RSS       SKIP IF NO OVERLAP
0358  01362 025416        JMP LSERR     PRINT OVERFLOW MESSAGE
0359  01363 044216        ADB N7       SET FOR NEXT IDENT ADDRESS
0360  01364 075071        STB TIDNT     SET NEXT IDENT ADDRESS
0361  01365 125333        JMP IDX,I     RETURN
0362*
0363*  THE INLST AND LSTX SUBROUTINES ARE USED TO SET THE CURRENT
0364*  LOADER SYMBOL TABLE (LST) ADDRESSES.  THE ADDR OF THE NEXT ENTRY
0365*  IN LST IS CONTAINED IN TLST.  ON RETURN FROM IDX, TLST CONTAINS
0366*  THE ADDRESS OF THE NEXT AVAILABLE ENTRY IN LST, OR THE ADDRESS
0367*  OF THE END OF LST.  THE ADDRESS OF THE FIRST ENTRY IN LST
0368*  IS AT BLST AND THE ADDRESS OF THE NEXT AVAILABLE ENTRY
0369*  IS AT PLST.
0370*  IF THE NEXT ENTRY IN LST OVERFLOWS INTO THE CURRENT
0371*  IDENT ENTRY, LSTX PRINTS A DIAGNOSTIC AND EXITS
0372*  TO THE IRRECOVERABLE ERROR SUBROUTINE.
0373*
0374*                                        SET INITIAL LST ADDRESS
```

```
0375*
0376*  INLST SETS THE ADDRESS OF THE FIRST ENTRY IN LST.
0377*
0378  01366 000000  INLST NOP
0379  01367 061065        LDA BLST      BLST = FIRST LST ADDRESS
0380  01370 071066        STA TLST      SET CURRENT LST ADDRESS
0381  01371 125366        JMP INLST,I   RETURN
0382*
0383*                                    SET LST ADDRESSES FROM TLST
0384*
0385*  LSTX SETS THE CURRENT LST ADDRESSES FROM TLST.
0386*
0387*  CALLING SEQUENCE:
0388*    A = IGNORED
0389*    B = IGNORED
0390*    JSB LSTX
0391*
0392*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0393*    (N+1): THE END OF LST IS REACHED AND THE CURRENT
0394*           LST ADDRESSES ARE THE ADDRESSES OF THE NEXT AVAILABLE
0395*           ENTRY IN LST.
0396*    (N+2): CURRENT LST ADDRESSES ARE SET (NOT END OF LST).
0397*
0398  01372 000000  LSTX  NOP
0399  01373 061066        LDA TLST      GET CURRENT LST ADDRESS
0400  01374 051067        CPA PLST      END OF LST TABLE?
0401  01375 002001        RSS
0402  01376 035372        ISZ LSTX      INCR RETURN ADDRESS
0403  01377 071126        STA LST1      SET WORD 1  ADDR
0404  01400 002004        INA
0405  01401 071127        STA LST2      SET WORD 2 ADDR
0406  01402 002004        INA
0407  01403 071130        STA LST3      SET WORD 3 ADDR
0408  01404 002004        INA
0409  01405 071131        STA LST4      SET WORD 4 ADDR
0410  01406 002004        INA
0411  01407 071132        STA LST5      SET WORD 5 ADDR
0412  01410 002004        INA
0413  01411 071066        STA TLST      SET NEXT LST ADDRESS
0414  01412 003004        CMA,INA
0415  01413 041072        ADA PIDNT     PIDNT = ADDR CURRENT IDENT
0416  01414 002021        SSA,RSS       SKIP = INVALID LST ENTRY
0417  01415 125372        JMP LSTX,I    RETURN
0418  01416 060500  LSERR LDA ERR07
0419  01417 014464        JSB IRERR
0420*
0421  01420 000000  YESNO NOP
0422  01421 114123        JSB AREPL,I
0423  01422 060222        LDA N3
0424  01423 114120        JSB AGETN,I
0425  01424 114117        JSB AGETA,I
0426  01425 050225        CPA ZERO
0427  01426 025431        JMP *+3
0428  01427 114124        JSB AINER,I
0429  01430 125420        JMP YESNO,I
0430  01431 006404        CLB,INB
```

```
0431  01432 061323          LDA TBUF
0432  01433 051000          CPA YES
0433  01434 025437          JMP *+3
0434  01435 006400          CLB
0435  01436 051001          CPA NO
0436  01437 035420          ISZ YESNO
0437  01440 125420          JMP YESNO,I
0438*
0439*                                        CLEAR PROGRAMS-LOADED FLAGS
0440*
0441*  CLID3 CLEARS THE USAGE FLAGS TO ENSURE THAT PROGRAMS WILL BE
0442*  RE-LOADED AGAIN IF CALLED MORE THAN ONCE.  THIS IS ESSENTIAL
0443*  FOR ALL UTILITY PROGRAMS AND USER SUBROUTINES, BUT MUST NOT
0444*  BE DONE FOR SYSTEM PROGRAMS, LIBRARY PROGRAMS, OR MAIN USER
0445*  PROGRAMS.  BOTH THE USAGE FLAG IN THE IDENT ENTRY AND THE
0446*  BP LINK ADDRESS FOR ALL ENTRY POINTS IN THE PROGRAM ARE CLEARED.
0447*
0448*  CALLING SEQUENCE:
0449*    A = IGNORED
0450*    B = IGNORED
0451*    JSB CLID3
0452*
0453*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0454*
0455  01441 000000  CLID3 NOP
0456  01442 060232         LDA P5
0457  01443 065061         LDB PLAD        GET ADDRESS OF PROGRAM LIST
0458  01444 051525         CPA PTYPE       PROG = BG SEGMENT?
0459  01445 065533         LDB PLMAN       YES - GET MAIN PROG LIST ADDRESS
0460  01446 075510         STB CURAP       SET CURRENT PROG LIST ADDRESS
0461  01447 007004         CMB,INB
0462  01450 045061         ADB PLAD        ADD PROGRAM LIST ADDRESS
0463  01451 044277         ADB P128        ADJUST FOR PROG LIST LENGTH
0464  01452 007000         CMB
0465  01453 075511         STB PLCNT       SET CURRENT PROG LIST COUNT
0466  01454 161510  TRID3  LDA CURAP,I     GET CURRENT PROG LIST ENTRY
0467  01455 002003         SZA,RSS         SKIP - NOT ENT OF PROG LIST
0468  01456 125441         JMP CLID3,I     RETURN (ALL FLAGS CLEARED)
0469  01457 035510         ISZ CURAP       INCR CURRENT PROG LIST ADDRESS
0470  01460 035511         ISZ PLCNT       SKIP - END OF PROG LIST
0471  01461 002001         RSS             NO - CONTINUE
0472  01462 125441         JMP CLID3,I     RETURN
0473  01463 071071         STA TIDNT       SET CURRENT IDENT ADDRESS
0474  01464 015333         JSB IDX         SET CURRENT IDENT ADDRESSES
0475  01465 102000         HLT 0B          IDENT NOT FOUND
0476  01466 161124         LDA ID6,I       GET M/S,TYPE
0477  01467 002020         SSA             SKIP IF SUB
0478  01470 025454         JMP TRID3       IGNORE MAIN
0479  01471 010246         AND M177        ISOLATE TYPE
0480  01472 050225         CPA ZERO        TYPE = SYSTEM?
0481  01473 025454         JMP TRID3       YES - DO NOT CHANGE FLAG
0482  01474 161121         LDA ID3,I       GET USAGE FLAG
0483  01475 010247         AND M7400       ISOLATE NAME 5
0484  01476 171121         STA ID3,I       SET NAME 5 IN IDENT
0485  01477 015366         JSB INLST       INITIALIZE LSTX
0486  01500 015372  CLSUT  JSB LSTX        SET CURRENT LST ADDRESSES
```

```
0487  01501 025454          JMP TRID3       TRY NEXT IDENT
0488  01502 161131          LDA LST4,I      GET IDENT ADDRESS
0489  01503 051117          CPA ID1         ENT/EXT BELONGS TO CURRENT PROG?
0490  01504 006401          CLB,RSS         YES - CONTINUE
0491  01505 025500          JMP CLSUT       TRY NEXT LST ENTRY
0492  01506 175132          STB LST5,I      CLEAR BP LINK ADDRESS
0493  01507 025500          JMP CLSUT       CONTINUE CLEARING BP LINK ADDR.
0494  01510                 ORG *
```

```
0496*
0497*                                                  THIS AREA USED FOR DBL LIST
0498*
0499   01510 000000  CURAP BSS 1          CURRENT PLIST ADDRESS
0500   01511 000000  PLCNT BSS 1          CURRENT PLIST COUNT
0501*
0502   01512 000000  AMAD  BSS 1          CURRENT MLIST ADDRESS
0503   01513 000000  MLIST BSS 8          MEMORY MAP BUFFER
0504*
0505   01523 000000  LICNT BSS 1          LONG ID SEGMENT COUNT
0506*
0507   01524 000000  DSKID BSS 1          DISK ID SEGMENT ADDRESS
0508*
0509   01525 000000  PTYPE BSS 1          PROGRAM TYPE
0510   01526 000000  FSYBP BSS 1           1ST WORD SYSTEM BP LINK
0511*
0512   01527 000000  TBREL BSS 1          CURRENT BP RELOC ADDR
0513   01530 000000  PBREL BSS 1          INITIAL BP RELOC ADDR
0514   01531 000000  PPREL BSS 1          INITIAL PROG RELOC ADDR
0515*
0516   01532 000000  RELAD BSS 1          CURRENT CORE RELOCATION ADDRESS
0517   01533 000000  PLMAN BSS 1          CURRENT BG MAIN PLIST ADDRESS
0518*
0519   01534 000000  BSBAD BSS 1          BG SEGMENT BP RELOC ADDR
0520   01535 000000  BSPAD BSS 1          BG SEGMENT PROG RELOC ADDR
0521*
0522   01536 000000  LFLAG BSS 1          PROGRAMS-LOADED FLAG
0523   01537 000000  IMAIN BSS 1          CURRENT MAIN IDENT ADDR
0524   01540 000000  HDFLG BSS 1          HEADING FORMAT FLAG
0525   01541 000000  CIDNT BSS 1          CURRENT MAIN IDENT ADDRESS
0526   01542 000000  DSKRD BSS 1          DISK INPUT ADDRESS
0527*
0528*
0529   01543 000000  DSKIN BSS 1          DISK ADDR OF INT CODE RECORD
0530   01544 000000  INTCN BSS 1          RECORD COUNT OF INT CODE
0531*
0532   01545 000000  TEMP  BSS 3
0533   01550 000000  I.XX  BSS 1          DRIVER ENTRY POINT
0534   01551 000000  C.XX  BSS 1          DRIVER EXIT POINT
0535   01552 044456  IDEC  ASC 1,I.
0536   01553 041456  CDEC  ASC 1,C.
0537*
0538   01554 000000  CURAL BSS 1          CURRENT LBUF ADDRESS
0539   01555 000000  LCNT  BSS 1          CURRENT LBUF COUNT
0540   01556 000000  LBUF  BSS 128        LOAD BUFFER
0541*
0542   01756 000000  CURAI BSS 1          CURRENT IBUF ADDRESS
0543   01757 000000  ICNT  BSS 1          CURRENT IBUF COUNT
0544*
```

```
0546  0176Ø                ORG *
0547*
```

```
0549*
0550  01350          .      EQU 13508
0551*
0552  01350          UMLWA  EQU .+0        LWA OF USEABLE MEMORY
0553*
0554  01351          JBINS  EQU .+1        S?ART TR/SEC OF JBIN AREA
0555  01352          JBINC  EQU .+2        CURRENT TR/SEC OF JBIN AREA
0556*
0557  01353          TBG    EQU .+3        TIME BASE GENERATOR I/O ADDRESS
0558  01354          CLOCK  EQU .+4        CURRENT SYSTEM CLOCK TIME
0559  01356          CLEX   EQU .+6        EXECUTION TIME CLOCK
0560  01360          CXMX   EQU .+8        MAXIMUM ALLOWABLE EXECUTION TIME
0561*
0562  01361          BATCH  EQU .+9        L. U. OF BATCH INPUT DEVICE
0563  01362          SYSTY  EQU .+10       L. U. OF SYSTEM TELETYPE
0564  01363          DUMPS  EQU .+11       ABORT /POST MORTEM DUMP FLAG
0565  01364          SYSDR  EQU .+12       SYSTEM DIRECTORY TRACK/SECTOR
0566*
0567  01365          SYSBF  EQU .+13       START SYS BUF T/USER DIRECT SECT
0568  01366          $SECT  EQU .+14       # SECTORS/CYLINDER
0569*
0570  01367          EQTAB  EQU .+15       FWA OF EQUIPMENT TABLE
0571  01370          EQT#   EQU .+16       # OF EQUIPMENT ENTRIES
0572*
0573  01371          LUTAB  EQU .+17       FWA OF LOGICAL UNIT TABLE
0574  01372          LUT#   EQU .+18       # OF LOGICAL UNIT ENTRIES
0575  01373          JBUF   EQU .+19       JOB INPUT BUFFER ASDRESS
0576*
0577  01374          JFILS  EQU .+20      SOURCE FILE START TRACK/SECTOR
0578  01375          JFILC  EQU .+21      SOURCE FILE CURRENT TRACK/SECTOR
0579*
0580  01376          RONBF  EQU .+22       USER AREA FILE NAME INFORMATION
0581*
0582  01411          EXPG   EQU .+33       DIRECTORY ENTRY FOR CURRENT PROG
0583*
0584  01424          DISCO  EQU .+44       IO CHNL #/ LAST TRACK ON DISC
0585  01425          SYSSC  EQU .+45       SYSTEM SUBCHANNEL
0586  01426          SCCNT  EQU .+46       LAST SUBCHANNEL ON SYSTEM
0587  01427          UDNTS  EQU .+47       NEXT USER TRACK/SECTOR
0588  01430          SYNTS  EQU .+48       NEXT SYST TRACK/SECTOR
0589  01431          CUDSC  EQU .+49       CURRENT USER DISC SUBCHANNEL
0590*
0591  01432          CRFLG  EQU .+50       CURRENT REQUEST FLAG
0592  01433          CUDLA  EQU .+51       CURRENT USER DISC LAST ACCESS
0593  01434          SDLA   EQU .+52       SYSTEM DISC LAST ACCESS
0594  01435          CUMID  EQU .+53       COMPUTER IDENTIFICATION
0595  01436          DBUFR  EQU .+54       SYSTEM DISC TRIPLET PARAM BUFFER
0596  01441          UBUFR  EQU .+57       USER DISC TRIPLET PARAM BUFFER
0597  01444          TSONE  EQU .+60       LAST TRK/SCTR + 1
0598  01445          GUDSC  EQU .+61       DEFAULT USER DISC SUBCHANNEL
0001  01446          SYSCD  EQU .+62       SYSTEM GEN. CODE
0002  01447          JFLSC  EQU .+63       SOURCE FILE SUBCHANNEL
0003  01450          DISCL  EQU .+64       USER DISC: SYS=1, NOT SYS=0
0004  01451          INTAB  EQU .+65       FWA OF INTERRUPT TABLE
0005  01452          INT#   EQU .+66       # OF INTERRUPT ENTRIES
0006*
```

```
0007  01453          EQT1   EQU .+67       ADDRESSES
0008  01454          EQT2   EQU .+68
0009  01455          EQT3   EQU .+69       OF
0010  01456          EQT4   EQU .+70
0011  01457          EQT5   EQU .+71       CURRENT
0012  01460          EQT6   EQU .+72
0013  01461          EQT7   EQU .+73       EQUIPMENT
0014  01462          EQT8   EQU .+74
0015  01463          EQT9   EQU .+75       TABLE
0016  01464          EQT10  EQU .+76
0017  01465          EQT11  EQU .+77
0018  01466          EQT12  EQU .+78       ENTRY
0019  01467          EQT13  EQU .+79
0020  01470          EQT14  EQU .+80
0021  01471          EQT15  EQU .+81
0022  01472          EQT16  EQU .+82
0023  01473          EQT17  EQU .+83
0024*
0025  01474          RQCNT  EQU .+84       # OF REQUEST PARAMETERS-1
0026  01475          RQRTN  EQU .+85       REQUEST RETURN ADDRESS
0027*
0028  01476          RQP1   EQU .+86       ADDRESSES
0029  01477          RQP2   EQU .+87
0030  01500          RQP3   EQU .+88       OF
0031  01501          RQP4   EQU .+89
0032  01502          RQP5   EQU .+90       REQUEST
0033  01503          RQP6   EQU .+91
0034  01504          RQP7   EQU .+92       PARAMETERS
0035  01505          RQP8   EQU .+93
0036*
0037  01506          NABRT  EQU .+94      ILLEGAL REQ ABORT/NO ABORT OPTION
0038*
0039  01507          XA     EQU .+95       A REGISTER
0040  01510          XB     EQU .+96       B REGISTER
0041  01511          XEO    EQU .+97       E AND O REGISTER
0042  01512          XSUSP  EQU .+98       POINT OF SUSPENSION
0043*
0044  01513          EXLOC  EQU .+99       LOC OF EX MOD DOUBLETS
0045  01514          EX#    EQU .+100      # OF EX MOD DOUBLETS
0046  01515          EXMOD  EQU .+101      CURRENT EX MOD #
0047  01516          EXMAN  EQU .+102      EX MOD MAIN LOAD ADDRESSES
0048  01520          EXBAS  EQU .+104      EX MOD BASE LOAD ADDRESSES
0049*
0050  01522          IODMN  EQU .+106      FWA OF IO DRIVER MOD MAIN AREA
0051  01523          IODBS  EQU .+107      FWA OF IO DRIVER MOD BASE AREA
0052*
0053  01524          UMFWA  EQU .+108      FWA OF USER MAIN AREA
0054  01525          UBFWA  EQU .+109      FWA OF USER BASE AREA
0055  01526          UBLWA  EQU .+110      LWA OF USER BASE AREA
0056*
0057  01527          CHAN   EQU .+111      CURRENT DMA CHANNEL NUMBER
0058*
0059  01530          OPATN  EQU .+112      OPERATOR/KEYBOARD ATTENTION FLAG
0060  01531          OPFLG  EQU .+113      OPERATOR COMMUNICATION FLAG
0061*
0062  01532          SWAP   EQU .+114      JOB PROCESSOR IN/NOT IN FLAG
```

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0063*
0064  01533          JOBPM EQU .+115     JOB PROC MAIN (T/S;#WORDS)
0065  01535          JOBPB EQU .+117      JOB PROCESSOR BASE # WORDS
0066  01536          TBSYG EQU .+118      T/S ADDR OF SYS TRACK TABLE
0067  01537          RTRK  EQU .+119      RT DISC ALLOC TRACK #
0068*
0069  01540          DUMMY EQU .+120      I/O ADDR OF PRIV INT CARD
0070  01541          MPTFL EQU .+121      MEMORY PROTECT FLAG
0071*
0072  01542          $GOPT EQU .+122      PT OF SUSP CONTINUATION ADDRESS
0073  01543          $IDCD EQU .+123      INPUT REQUEST CODE
0074  01544          $MDBF EQU .+124      EXEC MODULE DATA BUFFER
0075*
0076  01546          $TEMP EQU .+126
0077  01555          TEMP0 EQU .+133
0078  01556          TEMP1 EQU .+134
0079  01557          TEMP2 EQU .+135
0080  01560          TEMP3 EQU .+136
0081  01561          TEMP4 EQU .+137
0082  01562          TEMP5 EQU .+138
0083  01563          MSECT EQU .+139      NEG OF SECTORS/TRACK VALUE
0084  01564          VADR  EQU .+140      ADDR OF VIOLATING INSTRUCTION
0085  01565          IODMD EQU .+141      RES I/O DRIVER MODULE FLAG
0086  01566          RCODE EQU .+142      POSITIVE REQUEST CODE VALUE
0087  01567          SXA   EQU .+143
0088  01570          SXB   EQU .+144
0089  01571          SXEO  EQU .+145
0090  01572          SXSUS EQU .+146
0091  01573          SEQT1 EQU .+147
0092  01574          DSCLB EQU .+148      DISC T/S OF RELOCATABLE LIBRARY
0093  01575          DSCL# EQU .+149      # OF RELOCATABLE LIBRARY SECTORS
0094  01576          LSTCH EQU .+150      LAST SUBCHANNEL REFERENCED
0095  01601          SSFLG EQU .+153      SYSTEM SEARCH FLAG
0096  01602          ZWZW  EQU .+154      CHARC COMMUNICATION FLAG
0097  01760                ORG *
0098*
```

```
0100  02000                ORG 20008
0101*
0102*  INITIAL TRANSFER IS MADE TO DSGEN BY SETTING 100(8)
0103*  IN THE SWITCH REGISTER AND PRESSING RUN. IF ANY ERRORS ARE
0104*  DETECTED DURING THE INITIALIZATION PHASE, THE INITIALIZATION
0105*  SECTION CAN BE REPEATED.
0106*
0107*  THE FOLOOWING MESSAGES ARE PRINTED DURING THE INITIALIZATION
0108*  PHASE, WITH THE SPECIFICATIONS FOR EACH VALID RESONSE.
0109*
0110*
0111*  MESSAGE          RESPONSE
0112*  -------          --------
0113*
0114*  SYS GEN CODE?  ENTER 4 DECIMAL DIGITS
0115*
0116*  SYS DISC CHNL?  ENTER 2 OCTAL DIGITS
0117*
0118*  # SECTORS/DISC TRACK? ENTER 3 DECIMAL DIGITS
0119*
0120*  SYS DISC SIZE?  ENTER 3 DECIMAL DIGITS
0121*
0122*  # DRIVES?  ENTER 1 DECIMAL DIGIT
0123*
0124*  1ST SYSTEM TRACK?  ENTER 3 DECIMAL DIGITS
0125*
0126*  1ST SYSTEM SECTOR?  ENTER 3 DECIMAL DIGITS
0127*
0128*  SYS DISC SUBCHNL?  ENTER 1 OCTAL DIGIT
0129*
0130*  USER DISC SUBCHANNEL?  ENTER 1 OCTAL DIGIT
0131*
0132*  TBG CHNL?        ENTER 2 OCTAL DIGITS
0133*
0134*  PRIV INT CARD CHNL?   ENTER 2 OCTAL DIGITS
0135*
0136*  # DMA CHANNELS?        ENTER 1 OCTAL DIGIT
0137*
0138*  LWA MEM?         ENTER 5 OCTAL DIGITS
0139*
0140*  PRGM INPT?
0141*  LIBR INPT?       ENTER PT, MT, OR TY, OR DF
0142*  PRAM INPT?
0143*
0144*  FOLLOWING SUCCESSFUL COMPLETION OF THIS SECTION,
0145*  THE TRANSFER ADDRESS IS MOVED TO THE INITIALIZATION SECTION
0146*  OF THE LOADING PHASE.
0147*
0148  02000 107700  RTGEN CLC 0,C        TURN OFF ALL I/O,INTERRUPTS.
0149*
0150  02001 060107        LDA DRMAG      SAVE ORIGINAL MAG TAPE
0151  02002 070422        STA SAVMT        DRIVER ADDRESS
0152*
0153  02003 061312        LDA HLT4
0154  02004 070004        STA 4B
0155  02005 061313        LDA HLT5
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0156  02006 070005          STA 5B
0157  02007 060227          LDA P2
0158  02010 065310          LDB CARET      GET ADDRESS OF CR,LF
0159  02011 114102          JSB DRKEY,I    OUTPUT NEW LINE
0160*
0161*                      GET SYST. GEN. CODE
0162  02012 060266          LDA P13
0163  02013 067601          LDB MES11
0164  02014 017236          JSB REPLY
0165  02015 060221          LDA N4
0166  02016 017251          JSB DOCON
0167  02017 026012          JMP *-5
0168  02020 071076          STA SCODE
0169  02021 170210          STA ALCD,I
0170*
0171*                                     SET DISK CHANNEL
0172  02022 014452  GETCH JSB SPACE
0173  02023 060267          LDA P14
0174  02024 067514          LDB MESS2     MESS2: SYS DISC CHNL?
0175  02025 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
0176  02026 060227          LDA P2         SET FOR 2 OCTAL DIGITS INPUT
0177  02027 017251          JSB DOCON      GET DIGITS, RETURN OCTAL
0178  02030 026023          JMP *-5        REPEAT INPUT
0179  02031 071100          STA DCHNL      SET DISK CHANNEL NUMBER
0180  02032 170200          STA ACHNL,I    SET DISC CHANNEL IN BOOTSTRAP
0181*
0182*                    GET # SECTORS/DISC TRACK
0183  02033 014452          JSB SPACE      NEW LINE
0184  02034 060271          LDA P18
0185  02035 067631          LDB MES18      MES18: # SECTORS/TRACK?
0186  02036 017236          JSB REPLY      PRINT MESSAGE; GET REPLY
0187  02037 060222          LDA N3
0188  02040 017251          JSB DOCON
0189  02041 026034          JMP *-5
0190  02042 050405          CPA NSPCY      INPUT=115
0191  02043 002001          RSS             =YES, LEAVE SCTR/TRK = 23
0192  02044 070404          STA NSPTK       =NO, SET #SCTRS/TRK
0193  02045 102501          LIA 1
0194  02046 002020          SSA            INITIALIZE DISC ONLY?
0195  02047 026141          JMP GETSC       =YES
0196*                                     GET SYSTEM DISK SIZE
0197  02050 014452          JSB SPACE      NEW LINE
0198  02051 060267          LDA P14
0199  02052 067504          LDB MESS1      MESS1 = ADDR: SYS DISK SIZE?
0200  02053 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
0201  02054 060222          LDA N3         SET FOR 3 DECIMAL DIGITS INPUT
0202  02055 017251          JSB DOCON      GET DIGITS, RETURN OCTAL
0203  02056 026051          JMP *-5       REPEAT INPUT
0204  02057 071077          STA DSIZE      SET SYSTEM DISK SIZE
0205  02060 040255          ADA N201
0206  02061 002021          SSA,RSS
0207  02062 026051          JMP *-9
0208*
0209*                      GET #SUBCHNLS ON SYSTEM
0210  02063 014452          JSB SPACE
0211  02064 060236          LDA P9
```

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0212  02065 067611          LDB MES13
0213  02066 017236          JSB REPLY
0214  02067 060224          LDA N1
0215  02070 017251          JSB DOCON
0216  02071 026064          JMP *-5
0217  02072 002003          SZA,RSS
0218  02073 026064          JMP *-7
0219  02074 064404          LDB NSPTK
0220  02075 054274          CPB P23          ISS DISC?
0221  02076 001200          RAL               -YES
0222  02077 001200          RAL
0223  02100 040224          ADA N1
0224  02101 071107          STA SCNO
0225*
0226*                GET 1ST SYSTEM TRACK/SECTOR
0227  02102 014452          JSB SPACE
0228  02103 060272          LDA P20
0229  02104 067643          LDB MES30      MES30* 1ST SYSTEM TRACK
0230  02105 017236          JSB REPLY
0231  02106 060222          LDA N3
0232  02107 017251          JSB DOCON
0233  02110 026103          JMP *-6
0234  02111 070001          STA B
0235  02112 001727          ALF,ALF
0236  02113 070371          STA DSKAB      STORE START TRACK NUMBER
0237  02114 007004          CMB,INB
0238  02115 045077          ADB DSIZE       START SCRATCH AREA IN THE
0239  02116 005100          BRS               MIDDLE OF AVAILABLE DISC
0240  02117 005727          BLF,BLF
0241  02120 074372          STB DSKSC      STORE SCRATVHTRACK NUMBER
0242  02121 060272          LDA P20
0243  02122 067656          LDB MES31      MES31* 1ST SYSTEM SECTRR
0244  02123 017236          JSB REPLY
0245  02124 060222          LDA N3
0246  02125 017251          JSB DOCON
0247  02126 026121          JMP *-5        REPEAT INPLUT
0248  02127 030371          IOR DSKAB
0249  02130 070371          STA DSKAB      FORM START TRACK/SECTOR
0250*
0251*                     GET SYS DISC SUBCHNL
0252  02131 014452          JSB SPACE
0253  02132 060240          LDA P17
0254  02133 067617          LDB MES14
0255  02134 017236          JSB REPLY
0256  02135 060226          LDA P1
0257  02136 017251          JSB DOCON
0258  02137 026132          JMP *-5
0259  02140 114174          JSB ASTSC,I
0260*
0261*                     GET USER DISC SUBCHANNEL
0262  02141 014452  GETSC JSB SPACE
0263  02142 060271          LDA P18
0264  02143 067704          LDB MES50       MES50: USR DISC SUBCHNL
0265  02144 017236          JSB REPLY
0266  02145 060226          LDA P1
0267  02146 017251          JSB DOCON
```

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0268   02147 026142          JMP *-5       REPEAT INPUT
0269   02150 071101          STA UDSC       SET USER DISC SUBCHANNEL
0270   02151 106501          LIB 1
0271   02152 006021          SSB,RSS        INITIALIZE DISC ONLY?
0272   02153 026156          JMP TBSET       =NO
0273   02154 114174          JSB ASTSC,I
0274   02155 026271   CHJMP  JMP CHSET       =YES
0275*
0276*                                        SET TIME BASE GENERATOR CHANNEL
0277   02156 014462   TBSET  JSB SPACE
0278   02157 060272          LDA P20
0279   02160 067671          LDB MES37      MES 37* ADDR: TBG CHNL
0280   02161 017236          JSB REPLY       PRINT MESSAGE, GET REPLY
0281   02162 060227          LDA P2          SET FOR 2 OCTAL DIGITS INPUT
0282   02163 017251          JSB DOCON       GET DIGITS, RETURN OCTAL
0283   02164 026157          JMP *-5        REPEAT INPUT
0284   02165 071102          STA TBCHN       SET TBG CHANNEL NO.
0285*
0286   02166 014452          JSB SPACE
0287   02167 060272          LDA P20
0288   02170 067716           LDB MES60      PRIV INT CARD CHNL?
0289   02171 017236          JSB REPLY
0290   02172 060227           LDA P2
0291   02173 017251          JSB DOCON
0292   02174 026167          JMP *-5
0293   02175 071112           STA PICHN      SET PRIV INT CHANNEL NO.
0294*
0295   02176 065102          LDB TBCHN      IF TBG CHANNEL ASSIGNED,
0296   02177 006003          SZB,RSS
0297   02200 026207          JMP DMAQ-1
0298   02201 003004          CMA,INA          IT MUST BE OF LOWER PRIORITY
0299   02202 040001          ADA B            THAN PRIV INT CHANNEL.
0300   02203 002021          SSA,RSS
0301   02204 026207          JMP DMAQ-1
0302   02205 017264          JSB INERR      IF NOT, ERROR. RE-ENTER TBG & PI
0303   02206 026156          JMP TBSET        CHANNEL NUMBERS
0304*
0305   02207 014452          JSB SPACE      NEW LINE
0306   02210 060270   DMAQ    LDA P16
0307   02211 067570          LDB MES10      # DMA CHANNELS?
0308   02212 017236          JSB REPLY
0309   02213 002404          CLA,INA
0310   02214 017251          JSB DOCON
0311   02215 026210          JMP DMAQ
0312   02216 050226          CPA P1         1 => CUMID = 1
0313   02217 026223          JMP DMAR
0314   02220 050227          CPA P2         2 => CUMID = 0
0315   02221 002401          CLA,RSS
0316   02222 026210          JMP DMAQ       NEITHER, REPEAT QUESTION
0317   02223 071105   DMAR   STA COMPT
0318*
0319   02224 014452          JSB SPACE      NEW LINE
0320   02225 060237          LDA P10
0321   02226 067524          LDB MES53      MES53 = ADDR: LWA MEM?
0322   02227 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
0323   02230 060232          LDA P5         SET FOR 5 OCTAL DIGITS INPUT
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)324   02231 017251          JSB DOCON      GET DIGITS, RETURN OCTAL
)325   02232 026225          JMP *-5       REPEAT INPUT
)326   02233 040260          ADA N36        ALLOW SPACE FOR JBUF
)327   02234 071103          STA LWASM      SET LWA MEM FOR SYSTEM
)328*
)329   02235 014452          JSB SPACE
)330   02236 060237          LDA P10
)331   02237 065257          LDB MES16      CHECK IF SYSTEM SEARCHES ALLOWED
)332   02240 015420          JSB YESNO
)333   02241 026236          JMP *-3        REPEAT
)334   02242 051001          CPA NO         SET FLAG FOR NO SYSTEM SEARCHES
)335   02243 070410          STA SSSAV
)336*                                       SET PROGRAM INPUT UNIT
)337   02244 014452          JSB SPACE      NEW LINE
)338   02245 060237           LDA P10
)339   02246 067532          LDB MESS4      MESS4 = ADDR: PRGM INPT?
)340   02247 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
)341   02250 017270          JSB SINIT      GET CODE, ANALYSE
)342   02251 026245          JMP *-4
)343   02252 070423          STA PGMAD      SET PROGRAM INPUT DRIVER ADDR
)344*
)345*                                       SET LIBRARY INPUT UNIT
)346   02253 014452          JSB SPACE      NEW LINE
)347   02254 060237          LDA P10
)348   02255 067540          LDB MESS5      MESS5 = ADDR: LIBR INPT?
)349   02256 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
)350   02257 017270          JSB SINIT      GET CODE, ANALYSE
)351   02260 026254          JMP *-4
)352   02261 070424          STA LIBAD      SET LIB INPUT DRIVER ADDRESS
)353*
)354*                                       SET PARAMETER INPUT UNIT
)355   02262 014452          JSB SPACE      NEW LINE
)356   02263 060237          LDA P10
)357   02264 067546          LDB MESS6      MESS6 = ADDR: PRAM INPT?
)358   02265 017236          JSB REPLY      PRINT MESSAGE, GET REPLY
)359   02266 017270          JSB SINIT      GET CODE, ANALYSE
)360   02267 026263          JMP *-4
)361   02270 071104          STA PARAD      PARAD = PRAM INPUT DRIVER ADDR
```

```
0363*
0364*                                          CONFIGURE DISK I/O INSTRUCTIONS
0365*
0366   02271 060340  CHSET LDA UBLNK           GET DMA CONTROL
0367   02272 030342        IOR MSIGN             WORD (120000B)
0368   02273 031100        IOR DCHNL           INSERT CHANNEL NO.
0369   02274 102606        OTA 6               OUTPUT CONTROL WORD
0370   02275 170171        STA APBD,I          PUT DMACW IN PRE-BOOT PROCESSOR
0371*
0372   02276 061100        LDA DCHNL
0373   02277 170177        STA ADCHN,I
0374   02300 170170        STA APBC,I          PUT DISC I/O CHNL IN PRE-BOOT
0375*
0376   02301 160176        LDA ADVAD,I
0377   02302 071323        STA TBUF
0378   02303 060127        LDA DVORG
0379   02304 170176        STA ADVAD,I
0380   02305 064770        LDB DVEND
0381   02306 114175        JSB ACNFG,I         CONFIGURE DISC I/O INSTRUCTIONS
0382   02307 060172        LDA APBC1           CONFIGURE DISC I/O INSTRUCTIONS
0383   02310 170176        STA ADVAD,I           IN PRE-BOOT PROCESSOR
0384   02311 064173        LDB APBC2
0385   02312 114175        JSB ACNFG,I
0386   02313 061323        LDA TBUF
0387   02314 170176        STA ADVAD,I
0388   02315 102501        LIA 1
0389   02316 002020        SSA                 INITIALIZE DISC ONLY?
0390   02317 124163        JMP AIDSK,I          -YES
0391   02320 061103        LDA LWASM           GET LWA SYSTEM MEMORY
0392   02321 010306        AND M0760           ISOLATE PAGE NUMBER
0393   02322 071323        STA TBUF            SAVE PAGE NO. OF BOOTSTRAP LDR
0394   02323 160147        LDA ASBUF,I
0395   02324 010320        AND M1777
0396   02325 031323        IOR TBUF
0397   02326 170147        STA ASBUF,I         ADJUST PAGE# OF ASPBF
0398*
0399   02327 114166        JSB AOUT3,I         OUTPUT SECTORS 0-3
0400   02330 062530        LDA JSBOU
0401   02331 017425        JSB PAGIO
0402*
0403   02332 060113        LDA AINPT           GET ADDR OF INIT. PROG. CODE
0404   02333 070112        STA TRANS           SET CURRENT TRANSFER ADDRESS
```

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0406*
0407*                                          INITIALIZE LOADING
0408*
0409  02334 002400  INPUT CLA
0410  02335 071113        STA DERCN     SET DISK ERROR COUNT TO ZERO
0411  02336 070364        STA DEOF
0412  02337 014452        JSB SPACE     NEW LINE
0413  02340 014452        JSB SPACE     NEW LINE
0414  02341 060106        LDA LWAM      GET LAST WORD AVAIL MEMORY
0415  02342 040217        ADA N6        ADJUST FOR FIRST IDENT LENGTH
0416  02343 071070        STA BIDNT     BIDNT = ADDR OF FIRST IDENT
0417  02344 071072        STA PIDNT     PIDNT = ADDRESS OF NEXT IDENT
0418  02345 010306        AND M0760
0419  02346 043441        ADA N26K
0420  02347 065065        LDB BLST
0421  02350 002021        SSA,RSS       16K COMPUTER?
0422  02351 075057        STB AIBUF      -YES, MOVE IBUF
0423  02352 002021        SSA,RSS       16K?
0424  02353 044277        ADB P128       -YES, MOVE LST
0425  02354 075065        STB BLST
0426  02355 075067        STB PLST      INITIALIZE END OF LST
0427  02356 060372        LDA DSKSC     GET DISK ADDRESS OF SCRATCH AREA
0428  02357 071114        STA DSKAD     SET CURRENT DISK ADDRESS
0429  02360 017227        JSB IDBUF     INITIALIZE DBUF
0430  02361 003400        CCA           SET A = -1
0431  02362 071115        STA PLFLG     PLFLG = LOADING FLAG = -1
0432*
0433*                                          TEST FOR PROG, LIB, END OF LOAD
0434*                                          SWR = 00 - LOAD NEXT SOURCE PROG
0435*                                          SWR = 01 - TERMINATE LOADING
0436*                                          SWR = 10 - LOAD LIBRARY PROGRAM
0437*
0438  02363 102077  TSTIN HLT 77B       GET SWR, SET INPUT UNIT
0439  02364 002400        CLA           SET TO NOT IGNORE
0440  02365 073437        STA PASS2       DUPLICATE ENT'S
0441  02366 061072        LDA PIDNT     SAVE END OF IDENT & LST
0442  02367 070437        STA SIDNT       TABLES IN CASE OF CHECKSUM,
0443  02370 061067        LDA PLST        RECORD OUT OF SEQUENCE, OR
0444  02371 070440        STA SLST        ILLEGAL RECORD ERRORS
0445  02372 061114        LDA DSKAD     SAVE URRENT
0446  02373 073440        STA SDSKA       DISC ADDRESS
0447  02374 102501  TST1  LIA 1         GET SWITCH REGISTER
0448  02375 000010        SLA           SKIP IF MORE RECS TO READ
0449  02376 027344        JMP LSTEX     PROCESS END OF LOAD CONDITION
0450  02377 000040  TSTN4 CLE           SET FOR NO MASS STORAGE INPUT
0451  02400 064423        LDB PGMAD     GET PROG INPUT DRIVER ADDR
0452  02401 001110        ARS,SLA       SKIP - LOAD PROGRAM TAPE
0453  02402 064424        LDB LIBAD     GET LIBR INPUT DRIVER ADDR
0454  02403 006020        SSB           IF BIT 15 IS SET, SET THE "E"
0455  02404 005265        RBL,CLE,ERB    REGISTER FOR MASS STORAGE INPUT
0456  02405 074425        STB PINAD     SET INPUT UNIT DRIVER ADDR
0457  02406 002041        SEZ,RSS       IF E=1, SET DRMAG # 0 TO INDICAT
0458  02407 006400        CLB            INPUT IS FROM A MASS STORAGE
0459  02410 074107        STB DRMAG     DEVICE
0460  02411 003400        CCA
0461  02412 070431        STA ETFLG     SET EOT FLAG = IGNORE 10 FF
```

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0462*
0463*                                          READ BINARY RECORD
0464   02413 065055  LDRIN LDB ALBUF     ALBUF = ADDR OF LBUF
0465   02414 014441        JSB BUFCL     CLEAR LBUF
0466   02415 060107        LDA DRMAG
0467   02416 002003        SZA,RSS       IF 107#0, INPUT FROM MASS TORAGE
0468   02417 026427        JMP PTDV.
0469   02420 060257        LDA N128
0470   02421 065055        LDB ALBUF
0471   02422 114425        JSB PINAD,I
0472   02423 000000        OCT 0
0473   02424 026437        JMP MTEOT
0474   02425 026475        JMP PAR.E
0475   02426 026443        JMP TESTR
0476   02427 060257  PTDV. LDA N128
0477   02430 065055        LDB ALBUF     ALBUF = ADDRESS OF LBUF
0478   02431 114425        JSB PINAD,I   GET BINARY RECORD FROM INPT UNIT
0479   02432 002002        SZA           TEST FOR FEED FRAMES INPUT
0480   02433 026443        JMP TESTR     NO - PROCESS RECORD
0481   02434 060431        LDA ETFLG     GET EOT FLAG
0482   02435 002002        SZA           SKIP IF MAX 10 FF PERMITTED
0483   02436 026413        JMP LDRIN     IGNORE 10 FEED FRAMES
0484   02437 060231  MTEOT LDA P4
0485   02440 067554        LDB MESS7     MESS7 = ADDR: *EOT
0486   02441 114102        JSB DRKEY,I
0487   02442 026363        JMP TSTIN     TEST SWR, SET INPUT UNUT
0488*
0489*                                          PROCESS INPUT RECORD
0490   02443 002400  TESTR CLA
0491   02444 070431        STA ETFLG     SET EOT FLAG = MAX 10 FF
0492   02445 061557        LDA LBUF+1    GET RECORD IDENTIFIER
0493   02446 001723        ALF,RAR       ROTATE RIC TO LOW A
0494   02447 010234        AND M7        ISOLATE RIC
0495   02450 070433        STA RIC       RIC = RECORD IDENT CODE
0496   02451 002002        SZA           SKIP IF ABSOLUTE RECORD
0497   02452 040217        ADA L6        ADD -6B
0498   02453 002021        SSA,RSS       TEST FOR RIC = (1,5)
0499   02454 026501        JMP RCERR     INVALID RECORD TYPE
0500*
0501*                                          TEST CHECK SUM
0502   02455 065556        LDB LBUF      GET RECORD LENGTH
0503   02456 005727        BLF,BLF       ROTATE TO LOW B
0504   02457 007004        CMB,INB       SET TO NEG
0505   02460 044230        ADB P3        ADD 3 FOR WORD COUNT IN CHECKSUM
0506   02461 006021        SSB,RSS       TEST FOR SHORT (1,3) RECORD
0507   02462 026501        JMP RCERR     SHORT (1-3) WORD RECORD
0508   02463 075064        STB WDCNT     SET RECORD WORD COUNT
0509   02464 061557        LDA LBUF+1    GET WORD 2 - INITIALIZE CHECKSUM
0510   02465 065055        LDB ALBUF     ALBUF = A(LBUF)
0511   02466 044230        ADB P3
0512   02467 140001        ADA B,I       ADD WORD TO CHECKSUM
0513   02470 006004        INB           INCR ADDR
0514   02471 035064        ISZ WDCNT     SKIP IF END OF RECORD
0515   02472 026467        JMP *-3       CONTINUE CHECKSUM TEST
0516   02473 051560        CPA LBUF+2    TEST WITH GIVEN CHECKSUM
0517   02474 026505        JMP LDRC      PROCESS VALID RECORD
```

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0518*
0519*                                                   INVALID CHECKSUM
0520   02475 063443  PAR.E LDA ERR02
0521   02476 014456        JSB ERROR      PRINT ERROR MESSAGE
0522   02477 102002        HLT 02B        WAIT FOR OPERATOR INTERVEBTION
0523   02500 026621        JMP TRYA       TRY AGAIN AT BEGINNING
0524*
0525   02501 063445  RCERR LDA ERR04
0526   02502 014456        JSB ERROR      PRINT ERROR MESSAGE
0527   02503 102004        HLT 04B        WAIT FOR OPERATOR INTERVENTION
0528   02504 026621        JMP TRYA       TRY AGAIN AT BEGINNING
0529*
0530*                                                   CLASSIFY RECORDS BY TYPE
0531   02505 060433  LDRC  LDA RIC        GET REC IDENT CODE
0532   02506 065115        LDB PLFLG      PLFLG = PROGRAM LOADING FLAG
0533   02507 050226        CPA P1         RIC = 1? (NAM)
0534   02510 026634        JMP NAMR       PROCESS NAM REC
0535   02511 006002        SZB            SKIP IF NOT LOADING
0536   02512 026616        JMP NMERR      RECORD OUT OF SEQUENCE
0537   02513 050227        CPA P2         RIC = 2? (ENT)
0538   02514 026764        JMP ENTR       PROCESS ENT REC
0539   02515 050230        CPA P3         RIC = 3? (DBL)
0540   02516 026743        JMP DBLR       PROCESS DBL REC
0541   02517 050231        CPA P4         RIC = 4? (EXT)
0542   02520 026765        JMP EXTR       PROCESS EXT REC
```

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0544*
0545*                                          PROCESS END RECORD
0546  02521 002404          CLA,INA           SET MASK = 1
0547  02522 011557          AND LBUF+1        ISOLATE M/S
0548  02523 001300          RAR               MOVE M/S TO SIGN POSITION
0549  02524 131124          IOR ID6,I         ADD TO PRIORITY,TYPE
0550  02525 171124          STA ID6,I         SET M/S, PRIORITY, TYPE
0551  02526 061524          LDA DSKID         GET NEXT DBL ADDRESS
0552  02527 065055          LDB ALBUF         GET ADDRESS OF LBUF
0553  02530 114127  JSBOU    JSB ADOUT,I       OUTPUT END RECORD
0554  02531 060427          LDA TADBL         GET NEXT DBLST ADDRESS
0555  02532 070430          STA PADBL         SAVE END OF DBLST
0556  02533 002400          CLA               GET MIN RELOCATION ADDR
0557  02534 071074          STA TCHAR         SET CURRENT (MIN) VALUE
0558  02535 060321  SORT1    LDA M7777         GET MAX RELOCATION ADDR
0559  02536 071073          STA MAXC          SAVE MAX VALUE
0560  02537 060336          LDA DBADR         GET ADDRESS OF DBL LIST
0561  02540 070427          STA TADBL         SET CURRENT DBLST ADDRESS
0562  02541 060427  SORT2    LDA TADBL         GET ADDRESS OF NEXT ENTRY
0563  02542 034427          ISZ TADBL         INCR ADDR FOR NEXT ENTRY
0564  02543 050430          CPA PADBL         END OF LIST?
0565  02544 026601          JMP SORT5         YES - TEST FOR END OF SORT
0566  02545 164000          LDB A,I           GET CURRENT VALUE
0567  02546 007004          CMB,INB
0568  02547 045074          ADB TCHAR         ADD MIN VALUE
0569  02550 006003          SZB,RSS           SKIP - NOT CURRENT VALUE
0570  02551 026563          JMP SORT3         OUTPUT CURRENT RECORD
0571  02552 006021          SSB,RSS           SKIP - GREATER, EQUAL TO MIN
0572  02553 026541          JMP SORT2         IGNORE LESS THAN MIN
0573  02554 164000          LDB A,I           GET CURRENT VALUE
0574  02555 060001          LDA B             SAVE VALUE IN A
0575  02556 007004          CMB,INB
0576  02557 045073          ADB MAXC          ADD MAX VALUE
0577  02560 007026          CMB,SSB,INB,SZB   SKIP - NO NEW MAX
0578  02561 071073          STA MAXC          SET NEW MAX
0579  02562 026541          JMP SORT2         GET NEXT VALUE
0580*
0581  02563 003004  SORT3    CMA,INA
0582  02564 040336          ADA DBADR         GET ADDRESS OF DBL LIST
0583  02565 071064          STA WDCNT         SET DBL LIST DISPLACEMENT
0584  02566 070001          STA B
0585  02567 060371          LDA DSKAB
0586  02570 006003          SZB,RSS
0587  02571 026575          JMP *+4
0588  02572 014513          JSB DISKA         INCR DBL DISC ADDRESS
0589  02573 035064          ISZ WDCNT         SKIP - END OF SEARCH FOR DBL REC
0590  02574 026572          JMP *-2           INCR DISK ADDRESS
0591  02575 065055          LDB ALBUF         GET ADDRESS OF LBUF
0592  02576 014534  JSBIN    JSB DISKI         GET RECORD FROM DISC
0593  02577 017156          JSB DWRIT         PACK,PUT OUT TO DISK
0594  02600 026541          JMP SORT2         GET NEXT VALUE
0595*
0596  02601 061073  SORT5    LDA MAXC          GET PREVIOUS MAX
0597  02602 071074          STA TCHAR         SET NEW MIN
0598  02603 050321          CPA M7777         END OF SORT?(NO NEW MAX SET)
0599  02604 002001          RSS
```

```
0600   02605 026535          JMP SORT1      NO = PROCESS NEXT VALUE
0601*
0602   02606 003400          CCA
0603   02607 071115          STA PLFLG      SET PROG LOAD FLAG = LOADING
0604   02610 070432          STA CNFLG      SET FLAG FOR LB, UT END COUNT
0605   02611 061524          LDA DSKID      GET ADDRESS OF END RECORD
0606   02612 065055          LDB ALBUF      GET ADDR OF LBUF
0607   02613 014534          JSB DISKI      GET END RECORD
0608   02614 017156          JSB DWRIT      PACK, PUT OUT TO DISK
0609   02615 026413          JMP LDRIN
0610*
0611   02616 063444  NMERR LDA ERR03
0612   02617 014466          JSB ERROR      PRINT ERROR MESSAGE
0613   02620 102003          HLT 03B        WAIT FOR OPERATOR INTERVENTION
0614*
0615   02621 060437  TRYA   LDA SIDNT      RESTORE END OF
0616   02622 071072          STA PIDNT        IDENT & LST
0617   02623 060440          LDA SLST         TABLES
0618   02624 071067          STA PLST
0619   02625 063440          LDA SDSKA      RESTORE DISC
0001   02626 071114          STA DSKAD        ADDRESS
0002   02627 017227          JSB IDBUF      INITIALIZE DBUF
0003   02630 003400          CCA            SET PROGRAM FLAG
0004   02631 071115          STA PLFLG        = LOADING
0005   02632 073437          STA PASS2      SET TO IGNORE DUP ENT'S
0006   02633 026374          JMP TST1       RE-INPUT AT BEGINNING OF PROGRAM
```

```
0008*
0009*                                          NAM RECORD PROCESSOR
0010  01561          NAM12 EQU LBUF+3
0011  01562          NAM34 EQU LBUF+4
0012  01563          NAM5  EQU LBUF+5
0013  01565          NBP   EQU LBUF+7
0014  01566          NCOM  EQU LBUF+8
0015  01567          NTYP  EQU LBUF+9
0016*
0017  02634 006003   NAMR  SZB,RSS       SKIP IF LOADING
0018  02635 026616        JMP NMERR      RECORD OUT OF SEQUENCE
0019  02636 061556        LDA LBUF       GET RECORD LENGTH
0020  02637 001727        ALF,ALF        ROTATE TO LOW A
0021  02640 050240        CPA P17        TEST FOR NAM REC = 17 WORDS
0022  02641 026650        JMP NAMOK
0023  02642 050236        CPA P9         TEST FOR NAM REC = 9 WORDS
0024  02643 002001        RSS            YES - CONTINUE
0025  02644 026501        JMP RCERR      NO - INVALID RECORD TYPE
0026  02645 060240        LDA P17        GET NEW NAM REC LENGTH CODE
0027  02646 001727        ALF,ALF        ROTATE TO HIGH A
0028  02647 071556        STA LBUF       SET NAM REC LENGTH IN WORD 1
0029  02650 064371  NAMOK  LDB DSKAB     SET DBL DISC ADDR = 0,3
0030  02651 075524        STB DSKID      SET CURRENT DBL DISK ADDRESS
0031  02652 006400        CLB
0032  02653 075116        STB DSCNT      CLEAR DISK SEGMENT COUNT
0033  02654 074432        STB CNFLG      CLEAR DISK SEGMENT COUNT FLAG
0034  02655 075115        STB PLFLG      SET PLFLG = NOT LOADING
0035  02656 060336        LDA DBADR      GET ADDRESS OF DBL LIST
0036  02657 070427        STA TADBL      SET CURRENT DBLST ADDRESS
0037  02660 015327        JSB INIDX      INITIALIZE IDENT ADDRESSES
0038  02661 015333  NEXTN  JSB IDX       SET IDENT ADDRESSES
0039  02662 026706        JMP ENTNA      YES - ENTER NAME
0040  02663 061561        LDA NAM12      GET NAME 1,2
0041  02664 151117        CPA ID1,I      EQUAL?
0042  02665 002001        RSS            YES - CONTINUE
0043  02666 026661        JMP NEXTN      NO - TRY NEXT IDENT
0044  02667 061562        LDA NAM34      GET NAME 3, 4
0045  02670 151120        CPA ID2,I      EQUAL?
0046  02671 002001        RSS            YES - CONTINUE
0047  02672 026661        JMP NEXTN      NO - TRY NEXT IDENT
0048  02673 061563        LDA NAM5       GET NAME 5
0049  02674 010247        AND M7400      ISOLATE UPPER CHAR
0050  02675 151121        CPA ID3,I      EQUAL
0051  02676 002001        RSS            YES - CONTINUE
0052  02677 026661        JMP NEXTN      NO - TRY NEXT IDENT
0053*
0054  02700 063450        LDA ERR08      GET ERROR CODE - DUPLICATE NAMES
0055  02701 014456        JSB ERROR      PRINT DIAGNOSTIC
0056  02702 060232        LDA P5
0057  02703 065117        LDB ID1        GET ADDRESS OF NAME IN IDENT
0058  02704 114102        JSB DRKEY,I    PRINT DUPLICATE PROG. NAME
0059  02705 026717        JMP REPNA      REPLACE REST OF IDENT
0060*
0061  02706 061561  ENTNA  LDA NAM12      GET NAME 1,2
0062  02707 171117        STA ID1,I      SET NAME 1,2 IN IDENT
0063  02710 061562        LDA NAM34      GET NAME 3,4
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0064   02711 171120          STA ID2,I      SET NAME 3,4 IN IDENT
0065   02712 061563          LDA NAM5       GET NAME 5
0066   02713 010247          AND M7400      SAVE UPPER CHAR
0067   02714 171121          STA ID3,I      SET NAME 5 IN IDENT
0068   02715 061071          LDA TIDNT      GET ADDRESS OF NEXT IDENT
0069   02716 071072          STA PIDNT      SAVE NEXT IDENT ADDRESS
0070*
0071   02717 061567  REPNA LDA NTYP        GET PROGRAM TYPE
0072   02720 010245          AND M177       ISOLATE TYPE
0073   02721 171124          STA ID6,I      SET TYPE IN IDENT
0074   02722 030476          IOR LOLIB      LOLIB * 0 IF NOT SET YET
0075   02723 065114          LDB DSKAD
0076   02724 175123          STB ID5,I      SET CURRENT DISC ADDR IN IDENT
0077   02725 050233          CPA P6         1ST LIBRY RECORDS?
0078   02726 074476          STB LOLIB       -YES
0079   02727 050234          CPA P7
0080   02730 074476          STB LOLIB       -YES
0081   02731 065566          LDB NCOM       GET COMMON LENGTH
0082   02732 175122          STB ID4,I      SAVE COMMON LENGTH
0083   02733 063447          LDA ERR06      GET ERROR CODE
0084   02734 065565          LDB NBP        GET BP LENGTH
0085   02735 006002          SZB             -ERROR IF NON-ZERO
0086   02736 014456          JSB ERROR      PRINT DIAGNOSTIC
0087   02737 002400          CLA
0088   02740 171125          STA ID10,I     CLEAR BS IDENT MAIN ADDRESS
0089   02741 017156          JSB DWRIT      PACK RECORD, OUTPUT TO DISK
0090   02742 026413          JMP LDRIN      GET NEXT RECORD
```

```
0092*
0093*                                          DBL REC PROCESSOR
0094  02743 061561  DBLR  LDA LBUF+3    GET RELOCATION ADDRESS
0095  02744 170427       STA TADBL,I    SAVE ADDR IN DBLST
0096  02745 034427       ISZ TADBL      INCR DBLST ADDR FOR NEXT ENTRY
0097  02746 060427       LDA TADBL      GET NEXT DBLST ADDRESS
0098  02747 003004       CMA,INA
0099  02750 040111       ADA ANDBL      ADD ADDRESS OF END OF DBL LIST
0100  02751 002021       SSA,RSS        SKIP = DBL OVERFLOW
0101  02752 026755       JMP *+3        NO DBL OVERFLOW
0102  02753 063462       LDA ERR20      GET ERROR CODE = DBL OVERFLOW
0103  02754 014456       JSB ERROR      PRINT DIAGNOSTIC
0104  02755 061524       LDA DSKID      GET DBL DISK ADDRESS
0105  02756 065055       LDB ALBUF      GET ADDRESS OF LBUF
0106  02757 114127       JSB ADOUT,I    OUTPUT DBL RECORD
0107  02760 061524       LDA DSKID      GET DISK ADDRESS
0108  02761 014513       JSB DISKA      INCR ADDRESS
0109  02762 071524       STA DSKID      SET NEW DISK ADDRESS
0110  02763 026413       JMP LDRIN      GET NEXT RECORD
```

```
112*
113*                                          ENT/EXT RECORD PROCESSOR
114   02764 003401  ENTR  CCA,RSS             ENT PROCESSOR
115   02765 002400  EXTR  CLA                 EXT PROCESSOR
116   02766 071133       STA NXFLG           NXFLG = ENT/EXT FLAG
117   02767 061557       LDA LBUF+1          SET NO. SYMBOLS
118   02770 010243       AND M37             ISOLATE NO. SYMBOLS
119   02771 003004       CMA,INA
120   02772 071134       STA EXCNT           SET SYMBOL COUNT
121   02773 061055       LDA ALBUF           ALBUF = A(LBUF)
122   02774 040230       ADA P3              P3 = +3
123   02775 070434  SETNX STA SYM12          SET STARTING SYMBOL ADDR
124   02776 002004       INA
125   02777 070435       STA SYM34           SET CHARS 3,4 ADDR
126   03000 002004       INA
127   03001 070436       STA SYM5            SET CHAR 5 ADDR
128   03002 015366       JSB INLST           INITIALIZE LST ADDRESSES
129   03003 015372  ENTX1 JSB LSTX           SET LST1 - LST5
130   03004 027055       JMP ENTX3           END OF LST
131   03005 160434       LDA SYM12,I         GET CHARS 1,2
132   03006 151126       CPA LST1,I          EQUAL?
133   03007 002001       RSS                 YES - CONTINUE
134   03010 027003       JMP ENTX1           TRY NEXT ENTRY
135   03011 160435       LDA SYM34,I         GET CHARS 3,4
136   03012 151127       CPA LST2,I          EQUAL?
137   03013 002001       RSS                 YES - CONTINUE
138   03014 027003       JMP ENTX1           TRY NEXT ENTRY
139   03015 160436       LDA SYM6,I          GET CHAR 5
140   03016 010247       AND M7400           ISOLATE UPPER CHAR
141   03017 151130       CPA LST3,I          EQUAL?
142   03020 002001       RSS                 YES - CONTINUE
143   03021 027003       JMP ENTX1           TRY NEXT ENTRY
144*
145   03022 061133       LDA NXFLG           GET ENT/EXT FLAG
146   03023 002003       SZA,RSS             SKIP IF ENT
147   03024 027103       JMP ENTX4           COMPLETE EXT PROCESSING
148*
149*                                          PROCESS ENT REC
150   03025 161131       LDA LST4,I          GET WORD 4 OF LST ENTRY
151   03026 002003       SZA,RSS             SKIP IF NON-ZERO (DEFINED)
152   03027 027052       JMP ENTX2           MAKE ENTRY FOR UNDEFINED EXT
153   03030 002020       SSA                 SKIP IF ENTRY MADE
154   03031 027043       JMP ENTX6           MAKE ENTRY FOR BS EXT
155   03032 063437       LDA PASS2           RELOADING BECAUSE OF
156   03033 002002       SZA                   ERROR?
157   03034 027052       JMP ENTX2           YES - IGNORE DUP ENT'S
158   03035 063446       LDA ERR05           SET CODE - DUPLICATE ENTRY POINT
159   03036 014456       JSB ERROR           PRINT ERROR MESSAGE
160   03037 060232       LDA P5
161   03040 065126       LDB LST1            LST1 = ADDR OF SYMBOL
162   03041 114102       JSB DRKEY,I         PRINT DUPLICATE ENTRY SYMBOL
163   03042 027052       JMP ENTX2           IGNORE DUPLICATE ENT'S
164   03043 161124  ENTX6 LDA ID6,I          GET CURRENT TYPE
165   03044 010245       AND M177            ISOLATE TYPE
166   03045 050230       CPA P3              TYPE = BG DISK RESIDENT?
167   03046 002001       RSS                 YES - CONTINUE (ERROR)
```

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0168  03047 027052          JMP ENTX2      MAKE ENTRY FOR UNDEFINED EXT
0169  03050 063451          LDA ERR13      SET CODE = INVALID BG BS ORDER
0170  03051 014464          JSB IRERR      IRRECOVERABLE ERROR
0171  03052 061117  ENTX2   LDA ID1        GET MAIN IDENT ADDRESS
0172  03053 171131          STA LST4,I     ENTER IDENT ADDR IN WORD 4
0173  03054 027145          JMP ENTX5
0174  03055 160434  ENTX3   LDA SYM12,I    GET CHARS 1,2
0175  03056 171126          STA LST1,I     SET CHARS 1,2 IN LST
0176  03057 160435          LDA SYM34,I    GET CHARS 3,4
0177  03060 171127          STA LST2,I     SET CHARS 3,4 IN LST
0178  03061 160436          LDA SYM5,I     GET CHAR 5
0179  03062 010247          AND M7400      ISOLATE UPPER CHAR
0180  03063 171130          STA LST3,I     SET CHAR 5 IN LST
0181  03064 061132          LDA LST5       GET WORD 5 ADDR
0182  03065 002004          INA
0183  03066 071067          STA PLST       PLST = NEXT LST ENTRY ADDRESS
0184  03067 006400          CLB
0185  03070 175132          STB LST5,I     CLEAR WORD 5 IN LST ENTRY (BOTH)
0186  03071 061133          LDA NXFLG      GET EXT/ENT FLAG
0187  03072 002002          SZA            SKIP IF EXT ENTRY
0188  03073 027052          JMP ENTX2      SET WORD 4 OF ENT ENTRY
0189  03074 161124          LDA ID6,I      GET TYPE
0190  03075 010245          AND M177       ISOLATE TYPE
0191  03076 065117          LDB ID1        GET MAIN IDENT ADDRESS
0192  03077 050232          CPA P5         TYPE = BS?
0193  03100 007001          CMB,RSS        YES - SET LST4 = BS REF, SKIP
0194  03101 006400          CLB            NO - SET LST4 = UNDEFINED
0195  03102 175131          STB LST4,I     YES - SET ADDRESS IN LST WORD 4
0196  03103 161124  ENTX4   LDA ID6,I      GET TYPE
0197  03104 010245          AND M177       ISOLATE TYPE
0198  03105 050225          CPA ZERO       TYPE = SYSTEM?
0199  03106 002001          RSS            YES - SET LIBRARY RESIDENT CODE
0200  03107 050226          CPA P1         TYPE = RT RESIDENT?
0201  03110 135132          ISZ LST5,I     INCR WORD 5 - LIBRARY RESIDENT
0202  03111 050232          CPA P5         TYPE = BG SEGMENT?
0203  03112 002001          RSS            YES - CONTINUE
0204  03113 027145          JMP ENTX5      NO - IGNORE BG SEG MAIN ADDR
0205  03114 061117          LDA ID1        GET CURRENT IDENT ADDRESS
0206  03115 071537          STA IMAIN      SAVE IDENT ADDRESS
0207  03116 161131          LDA LST4,I     GET IDENT ADDRESS
0208  03117 002002          SZA            SKIP IF UNDEFINED
0209  03120 002020          SSA            SKIP IF IDENT ADDRESS
0210  03121 027145          JMP ENTX5      IGNORE UNDEFINED EXT
0211  03122 071071          STA TIDNT      SET IDENT ADDRESS FOR IDX
0212  03123 015333          JSB IDX        SET IDENT ADDRESSES
0213  03124 102000          HLT 0          IDENT NOT FOUND
0214  03125 161124          LDA ID6,I      GET TYPE
0215  03126 002021          SSA,RSS        SKIP IF MAIN
0216  03127 027133          JMP NTMAN      SET FLAG FOR IGNORING BS REF
0217  03130 010245          AND M177       ISOLATE TYPE
0218  03131 050230          CPA P3         TYPE = BG DISK RESIDENT?
0219  03132 007401          CCB,RSS        SET FLAG FOR BS REF, SKIP
0220  03133 006400  NTMAN   CLB            SET FLAG FOR IGNORING BS REF
0221  03134 075074          STB TCHAR      SET FLAG = 0/-1 = IGNORE/BS REF
0222  03135 061537          LDA IMAIN      GET CURRENT IDENT ADDRESS
0223  03136 071071          STA TIDNT      SET FOR NEXT IDENT ADDRESSES
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0224  03137 015333          JSB IDX        SET CURRENT IDENT ADDRESSES
0225  03140 102000          HLT 0          ADDRESS INVALID
0226  03141 035074          ISZ TCHAR      SKIP = SET IDENT ADDR FOR BS REF
0227  03142 027145          JMP ENTX5      IGNORE IF NOT MAIN BG DISK RES
0228  03143 161131          LDA LST4,I     GET BG MAIN ADDRESS
0229  03144 171125          STA ID10,I     SET MAIN IDENT ADDR IN BS IDENT
0230  03145 060434  ENTX5 LDA SYM12       GET SYMBOL ADDR
0231  03146 040230          ADA P3         ADJUST FOR BOTH ENT & EXT
0232  03147 065133          LDB NXFLG      GET EXT/ENT FLAG
0233  03150 006002          SZB            SKIP IF EXT ENTRY
0234  03151 002004          INA            ADJUST FOR ENT REC (4=WORD ENT)
0235  03152 035134          ISZ EXCNT      TEST SYMBOL COUNTER
0236  03153 026775          JMP SETNX      PROCESS NEXT SYMBOL
0237  03154 017156          JSB DWRIT      PACK RECORD, OUTPUT TO DISK
0238  03155 026413          JMP LDRIN      GET NEXT RECORD
```

```
0240*
0241*                                          WRITE RELOC REC ON DISK
0242*
0243*  DWRIT PACKS THE CURRENT CONTENTS OF LBUF INTO DBUF AND DUMPS
0244*  DBUF WHEN IT CONTAINS 128 WORDS OF RELOCATABLE INPUT.
0245*  IF THE END RECORD IS BEING PROCESSED, DWRIT TESTS FOR
0246*  PROCESSING LIBRARY PROGRAMS AND SETS THE NO. OF PACKED
0247*  RELOCATABLE LIBRARY RECORDS IN WORD 10 OF IDENT FOR
0248*  USE IN MOVING THE RELOCATABLE LIBRARY TO THE PROTECTED
0249*  AREA OF THE DISK AFTER THE LOADING PHASE IS COMPLETE.
0250*  CALLING SEQUENCE:
0251*    A = IGNORED
0252*    B = IGNORED
0253*    JSB DWRIT
0254*
0255*  RETURN: CONTENTS OF A AND B DESTROYED
0256*
0257  03156 000000  DWRIT NOP
0258  03157 065055        LDB ALBUF     GET ADDRESS OF LBUF
0259  03160 075554        STB CURAL     SAVE CURRENT LBUF ADDRESS
0260  03161 061556        LDA LBUF      GET RECORD LENGTH
0261  03162 001727        ALF,ALF       ROTATE TO LOW A
0262  03163 003004        CMA,INA
0263  03164 071555        STA LCNT      SAVE RECORD LENGTH COUNT
0264  03165 161554  LTOD  LDA CURAL,I   GET WORD FROM LBUF
0265  03166 171135        STA CURAD,I   SET WORD INTO DBUF
0266  03167 035136        ISZ DCNT      SKIP IF DBUF FULL
0267  03170 027173        JMP GETL      TEST FOR END OF LBUF
0268  03171 017215        JSB DDOUT     OUTPUT DBUF TO DISK
0269  03172 002001        RSS           OMIT CURRENT DBUF ADDR INCREMENT
0270  03173 035135  GETL  ISZ CURAD     INCR CURRENT DBUF ADDRESS
0271  03174 035564        ISZ CURAL     INCR CURRENT LBUF ADDRESS
0272  03175 035555        ISZ LCNT      SKIP IF LBUF MOVED TO DBUF
0273  03176 027165        JMP LTOD      MOVE NEXT WORD TO DBUF
0274  03177 060432        LDA CNFLG     GET END FLAG
0275  03200 002003        SZA,RSS       SKIP IF END RECORD READ
0276  03201 127156        JMP DWRIT,I   RETURN
0277*
0278  03202 061136        LDA DCNT
0279  03203 050257        CPA N128      BUFFER EMPTY?
0280  03204 002001        RSS
0281  03205 017215        JSB DDOUT     OUTPUT TO DISK
0282*
0283  03206 161124        LDA ID6,I     GET TYPE
0284  03207 010245        AND M177      ISOLATE TYPE
0285  03210 050232        CPA P5        TYPE = BG SEGMENT?
0286  03211 127156        JMP DWRIT,I   RETURN
0287  03212 061116        LDA DSCNT     GET TOTAL LIBR DISK SECTR COUNT
0288  03213 171125        STA ID10,I    SET TOTAL SECTOR COUNT IN IDENT
0289  03214 127156        JMP DWRIT,I   RETURN
0290*
0291*                                          OUTPUT DBUF TO DISK
0292*
0293*  THE DDOUT SUBROUTINE WRITES THE CONTENTS OF DBUF IN THE
0294*  CURRENT DISK SECTOR.  FOLLOWING THIS DBUF IS CLEARED,
0295*  THE CURRENT ADDRESS AND COUNT FOR DBUF ARE SET,
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0296*  AND THE NEXT DISK ADDRESS IS SET INTO DSKAD.
0297*
0298*  CALLING SEQUENCE:
0299*    A = IGNORED
0300*    B = IGNORED
0301*    JSB DDOUT
0302*
0303*  RETURN:  CONTENTS OF A AND B ARE DESTOYED.
0304*
0305  03215 000000  DDOUT NOP
0306  03216 061114        LDA DSKAD      GET CURRENT DISK ADDRESS
0307  03217 065056        LDB ADBUF      GET BUFFER ADDRESS
0308  03220 114127        JSB ADOUT,I    OUTPUT RECORD TO DISK
0309  03221 017227        JSB IDBUF      INITIALIZE DBUF
0310  03222 035116        ISZ DSCNT      COUNT RECORD
0311  03223 061114        LDA DSKAD      GET CURRENT DISK ADDRESS
0312  03224 014513        JSB DISKA      INCR CURRENT DISC ADDRESS
0313  03225 071114        STA DSKAD      SET NEW DISK ADDRESS
0314  03226 127215        JMP DDOUT,I    RETURN
0315*                                    INITIALIZE DBUF
0316*
0317*  THE IDBUF SUBROUTINE CLEARS DBUF AND SETS
0318*  CURAD AND DCNT TO THEIR INITIAL STATES.
0319*
0320  03227 000000  IDBUF NOP
0321  03230 065056        LDB ADBUF      SET TO START
0322  03231 075135        STB CURAD       OF DBUF
0323  03232 014441        JSB BUFCL      CLEAR DBUF
0324  03233 060257        LDA N128       INITIALIZE
0325  03234 071136        STA DCNT          COUNTER
0326  03235 127227        JMP IDBUF,I
0327*
0328*                                    PRINT MESSAGE, GET REPLY
0329*
0330*  THE SUBROUTINE REPLY CONTROLS THE PRINTING OF THE
0331*  MESSAGE, CLEARING OF THE INPUT BUFFER, TESTING FOR CHARACTERS
0332*  TRANSMITTED, AND INITIALIZATION OF THE BUFFER SCAN FOR
0333*  ALL INITIALIZATION MESSAGES.
0334*
0335*  CALLING SEQUENCE:
0336*    A = NO CHARACTERS (POS.) IN MESSAGE
0337*    B = ADDRESS OF MESSAGE
0338*    JSB REPLY
0339*
0340*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0341*
0342  03236 000000  REPLY NOP
0343  03237 114102        JSB DRKEY,I    PRINT MESSAGE
0344  03240 065055        LDB ALBUF      GET ADDRESS OF LBUF
0345  03241 014441        JSB BUFCL      CLEAR LBUF
0346  03242 060277        LDA P128
0347  03243 065055        LDB ALBUF      SET BUFFER ADDRESS FOR INPUT
0348  03244 114104        JSB DRTTY,I    GET REPLY FROM TTY
0349  03245 002003        SZA,RSS        SKIP IF CHARACTERS TRANSMITTED
0350  03246 027242        JMP *-4        REPEAT INPUT
0351  03247 114122        JSB AGINI,I    INITIALIZE LBUF SCAN
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0352  03250 127236          JMP REPLY,I    RETURN
0353*
0354*                                       NUMERICAL INPUT CONTROL
0355*
0356*  THE DOCON SUBROUTINE ANALYZES THE INPUT FOR THE
0357*  CHANNEL NO., DISK SIZES, TBG CHANNEL NO. AND LAST
0358*  WORD OF AVAILABLE MEMORY.
0359*
0360*  CALLING SEQUENCE:
0361*    A = MAX NO. OF CHARACTERS PERMITTED IN RESPONSE.
0362*        THE SIGN OF A DETERMINES THE CONVERSION FROM
0363*        ASCII TO OCTAL (POS.) OR DECIMAL (NEG.).
0364*    B = IGNORED
0365*    JSB DOCON
0366*
0367*  RETURN:
0368*    (N+1): CONTENTS OF A AND B ARE DESTROYED.  AN INVALID
0369*           CHARACTER HAS BEEN DETECTED IN THE RESPONSE, OR
0370*           THE RESPONSE CONTAINS AN INVALID NO. CHARACTERS.
0371*           THE MESSAGE IS TO BE REPEATED ON RETURN.
0372*    (N+2): A = CONVERTED RESULT
0373*
0374  03251 000000  DOCON NOP
0375  03252 114121        JSB AGETO,I    GET OCTAL/DECIMAL, RETURN OCTAL
0376  03253 027257        JMP *+4        INVALID DIGIT
0377  03254 114117        JSB AGETA,I    GET NEXT CHAR FROM LBUF
0378  03255 050225        CPA ZERO       CHAR = ZERO? (END OF BUFFER)
0379  03256 027261        JMP *+3        YES - CONTINUE
0380  03257 017264        JSB INERR      INVALID DIGIT ENTRY
0381  03260 127251        JMP DOCON,I    RETURN
0382  03261 037251        ISZ DOCON      INCR RETURN ADDRESS
0383  03262 061075        LDA OCTNO      GET CONVERTED NUMBER
0384  03263 127251        JMP DOCON,I    RETURN
0385*
0386*                                       INVALID TTY RESPONSE
0387*                                       INVALID TTY RESPONSEERS,TERSRAM
0388*  THE INERR SUBROUTINE PRINTS THE DIAGNOSTIC FOR INVALID
0389*  RESPONSES DURING THE INITIALIZATION SECTION.
0390*
0391*  CALLING SEQUENCE:
0392*    A = IGNORED
0393*    B = IGNORED
0394*    JSB INERR
0395*
0396*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0397*            ONTENTS OF A AND B ARE DESTROYED. . R INVALID S,TERSRAM
0398  03264 000000  INERR NOP
0399  03265 063442        LDA ERR01      SET INVALID DEVICE ERROR CODE
0400  03266 014456        JSB ERROR      PRINT ERROR MESSAGE
0401  03267 127264        JMP INERR,I    RETURN
0402*
0403*                                       ALPHABETIC INPUT CONTROL
0404*                                       ALPHABETIC INPUT CONTROLTERSRAM
0405*  THE SINIT SUBROUTINE ANALYZES THE RESPONSE FOR THE PROGRAM,
0406*  LIBRARY, AND PARAMETER INPUT.
0407*
```

```
0408*  CALLING SEQUENCE:
0409*    A = IGNORED
0410*    B = IGNORED
0411*    JSB SINITEDNCE:METER INPUT. THE RESPONSE FOR THE PROGRAM,RSRAM
0412*
0413*  RETURN:
0414*    (N+1): AN INVALID SET OF CHARACTERS (NOT PT, MT, TY)
0415*           OR NO. OF CHARACTERS HAS BEEN DETECTED.
0416*           AFTER PRINTING THE DIAGNOSTIC, A RETURN IS MADE TO
0417*           PERMIT THE MESSAGE TO BE REPEATED.  THE CONTENTS
0418*           OF A AND B ARE DESTROYED.
0419*    (N+2): A = ADDRESS OF DESIGNATED INPUT DRIVER
0420*           B = DESTROYED
0421*
0422  03270 000000  SINIT NOP
0423  03271 060223        LDA N2          SET MAX NO. DIGITS FOR GETNA
0424  03272 114120        JSB AGETN,I     MOVE LBUF TO TBUF
0425  03273 114117        JSB AGETA,I     GET NEXT CHAR FROM LBUF
0426  03274 050225        CPA ZERO        CHAR = ZERO? (END OF BUFFER)
0427  03275 027300        JMP *+3         YES - CONTINUE
0428  03276 017264  CODIN JSB INERR       INVALID TTY RESPONSE
0429  03277 127270        JMP SINIT,I     RETURN - ERROR
0430  03300 061323        LDA TBUF        GET 2-CHARACTER CODE
0431  03301 053453        CPA TYTYP       TYPE = TTY?
0432  03302 027312        JMP TYUN        YES - UNIT IS TELETYPE
0433  03303 053454        CPA PTTYP       TYPE = PT READER?
0434  03304 027314        JMP PTUN        SET UNIT = PT READER
0435  03305 053455        CPA MTTYP       TYPE = MAG TAPE?
0436  03306 027316        JMP MTUN        SET UNIT = MAG TAPE
0437  03307 053343        CPA DFTYP
0438  03310 027336        JMP DFUN        SET UNIT = DISC
0439  03311 027276        JMP CODIN       INVALID PT, MT OR TY
0440  03312 060104  TYUN   LDA DRTTY      DRTTY = TTY INPUT DRIVER ADDRESS
0441  03313 002001        RSS
0442  03314 060101  PTUN   LDA DRPTR      DRPTR = PT READER DRIVER ADDR
0443  03315 027334        JMP PT.DV
0444  03316 064422  MTUN   LDB SAVMT      GET MT DRVR ADDR
0445  03317 006003        SZB,RSS         DRIVER IN?
0446  03320 027276        JMP CODIN       -NO, NO DRIVER - INVALD
0447  03321 074107        STB DRMAG       -YES, SET 107 TO MT DRIVER ADDR
0448  03322 114107        JSB DRMAG,I
0449  03323 000003        OCT 3
0450  03324 002404        CLA,INA
0451  03325 006400        CLB
0452  03326 114107        JSB DRMAG,I
0453  03327 000004        OCT 4
0454  03330 102001        HLT 1B
0455  03331 102001        HLT 1B
0456  03332 060107  MS     LDA DRMAG       SET BIT 15 TO INDICATE MASS
0457  03333 030342        IOR MSIGN         STORAGE INPUT DEVICE
0458  03334 037270  PT.DV  ISZ SINIT
0459  03335 127270        JMP SINIT,I     RETURN
0460*
0461  03336 060107  DFUN   LDA DRMAG       HAS 107 ALREADY BEEN ASSIGNED
0462  03337 050422        CPA SAVMT         TO DISC?
0463  03340 117342        JSB ADFSC,I     -NO, INITIALIZE DISC PSEUDO DRVR
```

```
0464  03341 027332         JMP MS
0465*
0466  03342 014000  ADFSC DEF DSCHN
0467  03343 042106  DFTYP ASC 1,DF
0468*
0469*                                    LIST UNDEFINED EXTS
0470*
0471*  THE UNDEFINED EXTERNAL REFERENCES CAN BE LISTED AFTER
0472*  EACH END-OF-TAPE CONDITION IS DETECTED.
0473*
0474*  FOLLOWING COMPLETION OF THE EXT LISTING, THE COMPUTER
0475*  HALTS TO PERMIT THE OPERATOR TO RETURN FOR ADDITIONAL
0476*  PROGRAM INPUT, OR CONTINUE WITH THE PROCESSING OF PARAMETERS.
0477*
0478  03344 014452  LSTEX JSB SPACE      NEW LINE
0479  03345 014452        JSB SPACE      NEW LINE
0480  03346 003400        CCA
0481  03347 070426        STA NXCNT      SET SYMBOL COUNT = -1
0482  03350 015366        JSB INLST      INITIALIZE LST ADDRESSES
0483  03351 015372  OUTNX JSB LSTX       SET LST1 = LST5
0484  03352 027375        JMP EXOUT      END OF LIST
0485  03353 060357        LDA ASCEX      *
0486  03354 151126        CPA LST1,I     * EXT =
0487  03355 161127        LDA LST2,I     *  $EX3N?
0488  03356 050360        CPA ASCX3      *
0489  03357 027351        JMP OUTNX       =YES, SUPPRESS UNDEF EXT
0490  03360 161131        LDA LST4,I     GET WORD 4 OF LST
0491  03361 003026        CMA,SSA,INA,SZA  SKIP IF UNDEFINED OR BS REF
0492  03362 027351        JMP OUTNX      TRY NEXT LST SYMBOL
0493  03363 034426        ISZ NXCNT      TEST FOR FIRST UNDEF EXT
0494  03364 027371        JMP OUTEX      NO = PUT OUT SYMBOL NAME
0495  03365 060237        LDA P10
0496  03366 067557        LDB MESS8      MESS8 = ADDR: UNDEF EXTS
0497  03367 114102        JSB DRKEY,I    PRINT: UNDEF EXTS
0498  03370 014452        JSB SPACE      NEW LINE
0499  03371 060232  OUTEX LDA P5
0500  03372 065126        LDB LST1       LST1 = A(SYMBOL)
0501  03373 114102        JSB DRKEY,I    PRINT SYMBOL
0502  03374 027351        JMP OUTNX      TRY NEXT SYMBOL
0503*
0504  03375 062576  EXOUT LDA JSBIN
0505  03376 017425        JSB PAGIO
0506  03377 034426        ISZ NXCNT      TEST FOR NO UNDEFINED EXTS
0507  03400 027417        JMP ENDEX      NO = OMIT MESSAGE
0508  03401 060267        LDA P14
0509  03402 067660        LDB MESS9      MESS9 = ADDR: NO UNDEF EXTS
0510  03403 114102        JSB DRKEY,I    PRINT MESSAGE
0511  03404 014452        JSB SPACE
0512  03405 060107        LDA DRMAG      IF INPUT WAS FROM A MASS STORAGE
0513  03406 002003        SZA,RSS          DEVICE, ISSUE A REWIND
0514  03407 027414        JMP EX1
0515  03410 114425        JSB PINAD,I
0516  03411 000005        OCT 5
0517  03412 000000        NOP
0518  03413 000000        NOP
0519  03414 060422  EX1   LDA SAVMT      RESTORE ORIGINAL MAG TAPE DRIVER
```

```
0520  03415 070107         STA DRMAG       ADDRESS IN 107
0521  03416 124114         JMP IPARM,I
0522  03417 014452  ENDEX  JSB SPACE      NEW LINE
0523  03420 102077         HLT 77B        WAIT FOR OPERATOR INTERVENTION
0524  03421 102501         LIA 1          GET SWITCH REGISTER
0525  03422 002011         SLA,RSS        SKIP IF SWITCH 0 UP
0526  03423 026377         JMP TSTN4      TEST FOR PROGRAM OR LIBR LOAD
0527  03424 124114         JMP IPARM,I    INITIATE PARAMETER INPUT SECTION
0528*
0529  03425 000000  PAGIO  NOP
0530  03426 073433         STA JSBIO
0531  03427 060302         LDA L2000
0532  03430 070257         STA N128
0533  03431 060354         LDA TR201
0534  03432 064336         LDB DBADR
0535  03433 000000  JSBIO  NOP
0536  03434 060303         LDA .N128
0537  03435 070267         STA N128
0538  03436 127425         JMP PAGIO,I
```

```
0540  03437 000000  PASS2 NOP           DUP ENT IGNORE FLAG
0541  03440 000000  SDSKA NOP           SAVED DISC ADDRESS
0542  03441 152000  N26K  OCT -26000
0543*
0544  03442 030061  ERR01 ASC 1,01      INVALID TTY REPLY
0545  03443 030062  ERR02 ASC 1,02      CHECKSUM ERROR
0546  03444 030063  ERR03 ASC 1,03      RECORD OUT OF SEQUENCE
0547  03445 030064  ERR04 ASC 1,04      INVALID RECORD
0001  03446 030065  ERR05 ASC 1,05      DUPLICATE ENTRY POINTS
0002  03447 030066  ERR06 ASC 1,06      INVALID NAM REC - BP LENGTH
0003  03450 030070  ERR08 ASC 1,08      DUPLICATE PROGRAM NAMES
0004  03451 030463  ERR13 ASC 1,13      BG SEGMENT PRECEDES BG MAIN
0005  03452 031060  ERR20 ASC 1,20      DBL LIST OVERFLOW
0006*
0007  03453 052131  TYTYP ASC 1,TY
0008  03454 050124  PTTYP ASC 1,PT
0009  03455 046524  MTTYP ASC 1,MT
0010*
0011  03456 003467  MES32 DEF *+1
0012  03457 052125       ASC 21,TURN ON DISC PROTECT OVERRIDE - PRESS R
0013  03504 003505  MESS1 DEF *+1
0014  03506 051531       ASC 7,SYS DISC SIZE?
0015  03514 003515  MESS2 DEF *+1
0016  03516 051531       ASC 7,SYS DISC CHNL?
0017  03524 003525  MESS3 DEF *+1
0018  03525 046127       ASC 5,LWA MEM?
0019  03532 003533  MESS4 DEF *+1
0020  03533 050122       ASC 5,PRGM INPT?
0021  03540 003541  MESS5 DEF *+1
0022  03541 046111       ASC 5,LIBR INPT?
0023  03546 003547  MESS6 DEF *+1
0024  03547 050122       ASC 5,PRAM INPT?
0025  03554 003555  MESS7 DEF *+1
0026  03555 025105       ASC 2,*EOT
0027  03557 003563  MESS8 DEF *+4
0028  03560 003561  MESS9 DEF *+1
0029  03561 020116       ASC 7, NO UNDEF EXTS
0030*****************************************************
0031*                                                   *
0032* THE FOLLOWING MESSAGES ARE DESTROYED BY INBUF      *
0033*   AFTER THE INITIALIZATION PHASE IS COMPLETE       *
0034*                                                   *
0035*****************************************************
0036  03570 003571  MES10 DEF *+1
0037  03571 021440       ASC 8,# DMA CHANNELS?
0038  03601 003602  MES11 DEF *+1
0039  03602 051531       ASC 7,SYS GEN CODE?
0040  03611 003612  MES13 DEF *+1
0041  03612 021440       ASC 5,# DRIVES?
0042  03617 003620  MES14 DEF *+1
0043  03620 051531       ASC 9,SYS DISC SUBCHNL?
0044  03631 003632  MES18 DEF *+1
0045  03632 021440       ASC 9,# SECTORS/TRACK?
0046  03643 003644  MES30 DEF *+1
0047  03644 043111       ASC 10,FIRST SYSTEM TRACK?
0048  03656 003657  MES31 DEF *+1
```

```
1049  03657 043111         ASC 10,FIRST SYSTEM SECTOR?
1050  03671 003672  MES37 DEF *+1
1051  03672 052111         ASC 10,TIME BASE GEN CHNL?
1052  03704 003705  MES50 DEF *+1
1053  03705 052523         ASC  9,USER DISC SUBCHNL?
1054  03716 003717  MES60 DEF *+1
1055  03717 050122         ASC 10,PRIV INT CARD CHNL?
1056*
1057  03731                ORG *
1058  03600                ORG 36008
1059*
1060  03600 000000  IBUF   BSS 128
1061*
1062  04000                ORG *
```

```
0064  04000                 ORG 4000B
0065*
0066*                                       SET PARAMETERS INTO IDENTS
0067*
0068*  THE PARAMETER INPUT SECTION PERMITS ALTERATION (OR INTRODUCTION)
0069*  OF THE TYPE, PRIORITY, AND EXECUTION INTERVAL FOR EACH PROGRAM.
0070*  EACH PARAMETER RECORD HAS ONE OF THE FOLLOWING FORMATS:
0071*
0072*    NAME,TYPE
0073*
0074*  TYPE = 1 DECIMAL DIGIT (0-7)
0075*
0076*  NOTE: TYPE OF BG DISK RESIDENTS HAVING BG SEGMENTS MAY NOT
0077*        BE ALTERED WITHOUT DESTROYING RELATIONSHIP.
0078*
0079  04000 014452  PARAM JSB SPACE     NEW LINE
0080  04001 060273        LDA P22
0081  04002 067237        LDB MES24     MES24 = ADDR: PARAMETERS
0082  04003 114102        JSB DRKEY,I   PRINT: PARAMETERS
0083  04004 014452        JSB SPACE     NEW LINE
0084  04005 065104        LDB PARAD     GET PARAM INPUT DRIVER ADDRESS
0085  04006 054104        CPB DRTTY     INPUT UNIT = TTY?
0086  04007 002001        RSS           YES - CONTINUE
0087  04010 102077        HLT 77B       WAIT FOR INSERTION OF PARAMETERS
0088*
0089  04011 065055  PARST LDB ALBUF     GET ADDRESS OF LBUF
0090  04012 014441        JSB BUFCL     CLEAR LBUF
0091  04013 060277        LDA P128
0092  04014 065055        LDB ALBUF     GET ADDRESS OF LBUF
0093  04015 115104        JSB PARAD,I   GET ASCII PARAMETER RECORD
0094  04016 002003        SZA,RSS       SKIP IF CHARS INPUT
0095  04017 026013        JMP *-4       REPEAT PARAMETER INPUT
0096  04020 073354        STA PARNO     SAVE PARAMETER RECORD LENGTH
0097  04021 017115        JSB GINIT     INITIALIZE BUFFER SCAN
0098  04022 060220        LDA N5
0099  04023 017000        JSB GETNA     MOVE CHARS FROM LBUF TO TBUF
0100  04024 053236        CPA PTERM     CHARS = /E?
0101  04025 026111        JMP SETLB     YES - SET LIBRARY TYPE IN IDENT
0102  04026 016753        JSB GETAL     GET NEXT CHAR FROM LBUF
0103  04027 050337        CPA BLANK     CHAR = BLANK?(DELIMITER = COMMA)
0104  04030 026033        JMP *+3       YES - CONTINUE
0105*
0106  04031 063222  PANER LDA ERR09     PARAMETER NAME ERROR
0107  04032 026073        JMP PARER
0108*
0109  04033 015327        JSB INIDX     INITIALIZE IDENT ADDRESSES
0110  04034 015333  NXTID JSB IDX       SET CURRENT IDENT ADDRESSES
0111  04035 026031        JMP PANER     YES - INVALID NAME
0112  04036 161117        LDA ID1,I     GET NAME 1,2
0113  04037 051323        CPA TBUF      EQUAL?
0114  04040 002001        RSS           YES - CONTINUE
0115  04041 026034        JMP NXTID     NO - TRY NEXT IDENT
0116  04042 161120        LDA ID2,I     GET NAME 3,4
0117  04043 051324        CPA TBUF+1    EQUAL?
0118  04044 002001        RSS           YES - CONTINUE
0119  04045 026034        JMP NXTID     NO - TRY NEXT IDENT
```

```
0120  04046 161121        LDA ID3,I     GET NAME 5
0121  04047 010247        AND M7400     ISOLATE UPPER CHAR
0122  04050 051325        CPA TBUF+2    EQUAL?
0123  04051 002001        RSS           YES = CONTINUE
0124  04052 026034        JMP NXTID     NO = TRY NEXT NAME
0125*
0126*                                    SET TYPE
0127  04053 060223        LDA N2
0128  04054 017037        JSB GETOC     CONVERT TO OCTAL
0129  04055 026063        JMP PATER     INVALID DIGIT
0130  04056 016753        JSB GETAL     GET NEXT CHAR FROM LBUF
0131  04057 050225        CPA ZERO      CHAR = ZERO? (END OF BUFFER)
0132  04060 002001        RSS           YES = CONTIMUE
0133  04061 050337        CPA BLANK     CHAR = BLANK?(DELIMITER = COMMA)
0134  04062 026065        JMP SETYP     SET PROGRAM TYPE IN IDENT
0135  04063 063223  PATER LDA ERR10     PARAMETER TYPE ERROR
0136  04064 026073        JMP PARER
0137*
0138  04065 065075  SETYP LDB OCTNO     GET CONVERTED NUMBER
0139  04066 161124        LDA ID6,I     GET PREVIOUS TYPE
0140  04067 010317        AND M7600     SET PREVIOUS TYPE = ZERO
0141  04070 030001        IOR B         INSERT NEW TYPE
0142  04071 171124        STA ID6,I     SET NEW TYPE
0143  04072 026011        JMP PARST     YES = GET NEXT PARAMETER RECORD
0144*
0145  04073 073353  PARER STA TEMPE     SAVE ERROR CODE
0146  04074 016101        JSB ERPNT     TEST FOR PRINTING LBUF
0147  04075 063353        LDA TEMPE     GET ERROR CODE
0148  04076 014456        JSB ERROR     PRINT ERROR MESSAGE
0149  04077 014452        JSB SPACE     NEW LINE
0150  04100 026011        JMP PARST     REREAD PARAMETER RECORD
0151*
0152*                                    PRINT LBUF UNLESS FROM TTY
0153  04101 000000  ERPNT NOP           PRINT CONTENTS OF LBUF
0154  04102 065104        LDB PARAD     GET ADDRESS OF PARAMETER UNIT
0155  04103 054104        CPB DRTTY     DEVICE = TTY?
0156  04104 126101        JMP ERPNT,I   YES = OMIT PRINTING ON TTY
0157  04105 063354        LDA PARNO     PARNO = PARAMETER RECORD LENGTH
0158  04106 065055        LDB ALBUF     ALBUF = BUFFER ADDRESS
0159  04107 114102        JSB DRKEY,I   PRINT PARAMETER RECORD
0160  04110 126101        JMP ERPNT,I   RETURN
0161*
0162  04111 016101  SETLB JSB ERPNT     TEST FOR PRINTING /E
0163  04112 014452        JSB SPACE     NEW LINE
```

```
0165*
0166*                SET ID SEGMENT COUNT TOTALS
0167*
0168*  THIS SECTION IS EXECUTED WHEN THE PARAMETERS HAVE
0169*  BEEN COMPLETELY READ IN.
0170*  IT COUNTS THE NUMBER OF ID SEGMENTS NEEDED.
0171*  IF TYPE IS LIBRARY, THEN NO ID SEGMENT IS NEEDED
0172*  IF TYPE IS SYSTEM RESIDENT, THEN NO ID SEGMENT IS NEEDED.
0173*
0174*
0175  04113 002404          CLA,INA
0176  04114 071523          STA LICNT      CLEAR LONG ID SEG COUNT
0177  04115 015327          JSB INIDX      INITIALIZE IDX
0178  04116 015333  SETIX   JSB IDX        SET IDENT ADDRESSES
0179  04117 026131          JMP TRMCN      TERMINATE ID SEGMENT COUNT
0180  04120 161124          LDA ID6,I     CHECK IF TYPE IS LIBRARY
0181  04121 010245          AND M177
0182  04122 002003          SZA,RSS       CHECK IF TYPE SYSTEM RESIDENT
0183  04123 026116          JMP SETIX
0184  04124 040217          ADA N6
0185  04125 002021          SSA,RSS        TYPE = LIBRARY?
0186  04126 026116          JMP SETIX      -YES
0187  04127 035523          ISZ LICNT
0188  04130 026116          JMP SETIX     GO TO NEXT IDENT
0189*
0190  04131 060353  TRMCN   LDA TR200      SAVE CODE DESTROYED BY PLIST BUF
0191  04132 065061          LDB PLAD       IT IS OUTPUT TO TRACK 200,
0192  04133 114127          JSB ADOUT,I     SECTOR 0.(RESTORED IN INT PROCE
0193*
0194  04134 060126          LDA AFWAP      GET ADDRESS OF LOADING SECTION
0195  04135 070112          STA TRANS      RESET TRANSFER ADDRESS TO LOAD
0196  04136 124126          JMP AFWAP,I    LOAD ABSOLUTE SYSTEM
```

```
0198*
0199*                                                  CLEAR UNDEFINED EXTS
0200*
0201   04137 015366  IPARS JSB INLST      INITIALIZE LSTX
0202   04140 015372  CLST3 JSB LSTX       SET LST ADDRESSES
0203   04141 026150         JMP ENDLB     SET USAGE FLAGS
0204   04142 161131         LDA LST4,I    GET IDENT ADDRESS
0205   04143 002021         SSA,RSS       SKIP - UNDEFINED EXT
0206   04144 026140         JMP CLST3     IGNORE DEFINED ENTRY POINT
0207   04145 002400         CLA
0208   04146 171131         STA LST4,I    CLEAR IDENT ADDRESS
0209   04147 026140         JMP CLST3     TRY NEXT LST ENTRY
0210*
0211   04150 060115  ENDLB  LDA APARS     GET ADDR OF PARAMETER INPUT CODE
0212   04151 070112         STA TRANS     RESET INITIAL TRANSFER ADDRESS
0213   04152 026000         JMP PARAM     GET PARAMETERS
```

```
215*
216*                                        GENERATE I/O TABLES
217*
218*  THIS SECTION OF CODE GENERATES THE I/O TABLES
219*  FOR THE SYSTEM.  THESE INCLUDE THE EQUIPMENT TABLE (EQT),
220*  STANDARD DEVICE REFERENCE TABLE (DRT), AND INTERRUPT TABLE.
221*
222*  THE EQT RECORDS HAVE THE FOLLOWING FORMAT:
223*
224*    N1,DVRN2<,D><,R><,U>
225*
226*  N1 = CHANNEL NO. (2 OCTAL DIGITS)
227*  N2 = DRIVER CLASS, CODE (2 OCTAL DIGITS)
228*  D = DMA FLAG (OPTIONAL)
229*  R = CORE RESIDENT FLAG
230*  U = UNIT NO. (OPTIONAL)
231*
232*
233*  EACH DRT RECORD CONSISTS OF A 2-DIGIT NO. SPECIFYING THE
234*  CORRESPONDING ENTRY IN THE EQUIPMENT TABLE.  FOR EXAMPLE, IN
235*  RESPONSE TO THE MESSAGE:  5 = ?, THE RESPONSE 6 INDICATES THAT
236*  THE LOGICAL UNIT NO. 5 IS TO USE DEVICE 6 IN EQT.
237*
238*
239*  THE INT RECORDS HAVE ONE OF THE FOLLOWING FORMATS:
240*
241*    N1,OPTION
242*
243*  N1 = CHANNEL NO. (2 OCTAL DIGITS - MUST BE IN INCREASING ORDER)
244*  OPTION:
245*
246*          EQT,N2      = EQT NO.
247*          ENT,NAME    = DEFINE ENTRY ADDRESS
248*          ABS,XXXXXX  = ABSOLUTE OCTAL VALUE
249*
250*
251  04153 000000  GENIO NOP
252*
253  04154 060345        LDA INWRT     SET FOR UNPROTECTED
254  04155 070347        STA DWRT       WRITE COMMAND
255  04156 062751        LDA T200.     SAVE PLIST BUFFER
256  04157 065061        LDB PLAD       ON TRACK 200,
257  04160 114127        JSB ADOUT,I       SECTOR 1
258  04161 060346        LDA IPWRT     RESTORE PROTECTED
259  04162 070347        STA DWRT       WRITE COMMAND
260*
261  04163 060353        LDA TR200     READ IN CODE
262  04164 065061        LDB PLAD       SAVED ON TRACK 200 PRIOR
263  04165 014534        JSB DISKI       TO DESTRUCTION BY PLIST
264*
265*                                   GENERATE EQUIPMENT TABLE (EQT)
266*
267  04166 061531        LDA PPREL     GET CURRENT PROG RELOC ADDRESS
268  04167 070411        STA AEQT      SAVE ADDRESS OF EQT
269  04170 002400        CLA
270  04171 070412        STA CEQT      CLEAR NO. OF EQT ENTRIES
```

```
0271  04172 062750        LDA N119
0272  04173 071136        STA DCNT      REDUCE SECTOR SIZE = 119 WORDS
0273  04174 014462        JSB SPACE
0274  04175 060274        LDA P23
0275  04176 067253        LDB ME$25     ME$25 = ADDR: * EQT TABLE ENTRY
0276  04177 114102        JSB DRKEY,I   PRINT: * EQUIPMENT TABLE ENTRY
0277  04200 014452        JSB SPACE     NEW LINE
0278*
0279  04201 065055  SEQT  LDB ALBUF
0280  04202 014441        JSB BUFCL     CLEAR LBUF
0281  04203 060277        LDA P128
0282  04204 065055        LDB ALBUF     GET ADDRESS OF LBUF
0283  04205 114104        JSB DRTTY,I   GET EQT RECORD FROM TTY
0284  04206 002003        SZA,RSS       SKIP = DATA INPUT
0285  04207 026203        JMP *-4       REPEAT INPUT
0286  04210 017115        JSB GINIT     INITIALIZE LBUF SCAN
0287  04211 060223        LDA N2
0288  04212 017000        JSB GETNA     MOVE 2 CHARS TO TBUF
0289  04213 053236        CPA PTERM     CHARS = /E?
0290  04214 026460        JMP SSQT      YES = SET DEVICE REF TABLE (SQT)
0291  04215 017115        JSB GINIT     RE-INITIALIZE LBUF SCAN
0292  04216 060227        LDA P2
0293  04217 017037        JSB GETOC     GET 2 OCTAL DIGITS, CONVERT
0294  04220 026230        JMP IOERR     INVALID DIGIT
0295  04221 003004        CMA,INA       MAXIMUM I/O CHANNEL
0296  04222 040243        ADA M37         IS 37
0297  04223 002020        SSA
0298  04224 026230        JMP IOERR
0299  04225 016753        JSB GETAL     GET NEXT CHAR FROM LBUF
0300  04226 050337        CPA BLANK     CHAR = COMMA?
0301  04227 026233        JMP CLDBU     YES = SET CHNL NO., CLEAR D,R,U
0302  04230 063225  IOERR LDA ERR24     SET CODE = INVALID CHNL IN EQT
0303  04231 014456        JSB ERROR     PRINT DIAGNOSTIC
0304  04232 026201        JMP SEQT      GET NEXT EQT RECORD
0305*
0306  04233 065075  CLDBU LDB OCTNO     GET I/O CHANNEL NO.
0307  04234 077355        STB IOADD     SET I/O ADDRESS
0308  04235 044217        ADB N6      CHECK IF LEGAL I/O CHNL ADDRESS
0309  04236 006020        SSB
0310  04237 026230        JMP IOERR   NO, SO REJECT
0311  04240 002400        CLA
0312  04241 073356        STA IODMA     CLEAR DMA FLAG
0313  04242 073357        STA IOBUF   CLEAR NON RES/RES FLAG
0314  04243 073360        STA IOUNT     CLEAR UNIT NO. (FOR MULTI-CHNL)
0315  04244 002404        CLA,INA
0316  04245 017000        JSB GETNA     MOVE 1 CHAR TO RH TBUF POSITION
0317  04246 053345        CPA CHARD     CHAR = D?
0318  04247 002001        RSS           YES = CONTINUE
0319  04250 026255        JMP DVERR     INVALID DRIVER NAME
0320  04251 060223        LDA N2
0321  04252 017000        JSB GETNA     MOVE 2 CHARS TO TBUF (CHARS 2,3)
0322  04253 053352        CPA CHAVR     CHARS = VR?
0323  04254 026260        JMP STYPE     YES = GET DRIVER TYPE
0324  04255 063226  DVERR LDA ERR25     SET CODE = INVALID DRIVER NAME
0325  04256 014456        JSB ERROR     PRINT DIAGNOSTIC
0326  04257 026201        JMP SEQT      GET NEXT EQT RECORD
```

```
0327  04260 060223  STYPE LDA N2
0328  04261 017000        JSB GETNA      MOVE 2 CHARS TO TBUF
0329  04262 073362        STA ASTYP      SAVE 2 ASCII CHARS FOR I,XX,C,XX
0330  04263 003400        CCA
0331  04264 041554        ADA CURAL      ADJUST CURRENT LBUF ADDR
0332  04265 071554        STA CURAL      RESET CURAL TO CONVERT TYPE
0333  04266 060227        LDA P2
0334  04267 017037        JSB GETOC      GET 2 OCTAL CHARS, CONVERT
0335  04270 026255        JMP DVERR      INVALID DRIVER NAME
0336  04271 065075        LDB OCTNO      GET DRIVER TYPE
0337  04272 005727        BLF,BLF        ROTATE TO UPPER B
0338  04273 077361        STB IOTYP      SET DRIVER TYPE
0339  04274 016753        JSB GETAL      GET NEXT CHAR FROM LBUF
0340  04275 050225        CPA ZERO       END OF BUFFER?
0341  04276 026355        JMP LISCN-1    SCAN FOR I,XX, C,XX
0342  04277 050337        CPA BLANK      CHAR = COMMA?
0343  04300 002001        RSS            YES = CONTINUE
0344  04301 026255        JMP DVERR      NO = INVALID DRIVER NAME
0345*
0346  04302 003400        CCA
0347  04303 073363        STA DFLAG      SET DMA-IN FLAG
0348  04304 073364        STA BFLAG     SET NON RES/RES FLAG
0349  04305 073365        STA UFLAG      SET UNIT-IN FLAG
0350*
0351  04306 003400  INDBU CCA
0352  04307 073372        STA CMFLG      SET COMMA FLAG = NO COMMA IN
0353  04310 016753        JSB GETAL      GET NEXT CHAR FROM LBUF
0354  04311 053345        CPA CHARD      CHAR = D?
0355  04312 026343        JMP SEDMA      YES = SET DMA CODE
0356  04313 053346        CPA CHARR     CHAR = R?
0357  04314 026350        JMP SETBU      YES = SET BUFFERING CODE
0358  04315 040301        ADA L60        SUBTRACT 60B
0359  04316 071074        STA TCHAR      SAVE CHAR FOR UNIT NO.
0360  04317 002020        SSA            SKIP = VALID LOWER LIMIT
0361  04320 026324        JMP UNERR      INVALID CHAR (NOT D,B,0-7)
0362  04321 040215        ADA L10        SUBTRACT 10 B
0363  04322 002020        SSA            SKIP = INVALID UPPER LIMIT
0364  04323 026327        JMP STUNT      SET UNIT NO.
0365  04324 063227  UNERR LDA ERR26
0366  04325 014456        JSB ERROR      PRINT DIAGNOSTIC
0367  04326 026201        JMP SEQT       GET NEXT EQT RECORD
0368  04327 037365  STUNT ISZ UFLAG      SKIP = FIRST U ENTERED
0369  04330 026324        JMP UNERR      DUPLICATE UNIT NOS. ENTERED
0370  04331 061074        LDA TCHAR      GET CONVERTED UNIT NO.
0371  04332 001700        ALF
0372  04333 001222        RAL,RAL        ROTATE TO BITS 6-8
0373  04334 073360        STA IOUNT      SET I/O UNIT NO.
0374  04335 016753  EQTST JSB GETAL      GET NEXT CHAR FROM LBUF
0375  04336 050225        CPA ZERO       END OF BUFFER?
0376  04337 026355        JMP LISCN-1    SCAN FOR I,XX, C,XX
0377  04340 050337        CPA BLANK      CHAR = COMMA?
0378  04341 026306        JMP INDBU      YES = GET NEXT D,R,U, ENTRY
0379  04342 026324        JMP UNERR     NO, INVALID CHARACTER
0380*
0381  04343 037363  SEDMA ISZ DFLAG      SKIP = FIRST D ENTERED
0382  04344 026324        JMP UNERR      DUPLICATE D'S ENTERED
```

```
0383  04345 060342          LDA MSIGN     SET BIT 15 = 1 FOR DMA FLAG
0384  04346 073356          STA IODMA     SET DMA CODE
0385  04347 026335          JMP EQTST     TEST FOR NEXT OPERAND
0386*
0387  04350 037364  SETBU    ISZ BFLAG     SKIP, FIRST R ENTERED
0388  04351 026324          JMP UNERR     DUPLICATE R S ENTERED
0389  04352 063347          LDA BIT14      SET BIT14 = 1
0390  04353 073357          STA IOBUF     SET DRIVER RESIDENCE CODE
0391  04354 026335          JMP EQTST      TEST FOR NEXT OPERAND
0392*
0393  04355 015366          JSB INLST      INITIALIZE LSTX
0394  04356 015372  LISCN    JSB LSTX      SET LST ADDRESSES
0395  04357 026255          JMP DVERR     I,XX NOT FOUND IN LST
0396  04360 161126          LDA LST1,I    GET NAME 1,2 OF LST ENTRY
0397  04361 051552          CPA IDEC      CHARS = I,?
0398  04362 002001          RSS           YES - CONTINUE
0399  04363 026356          JMP LISCN     NO - TRY NEXT LST ENTRY
0400  04364 161127          LDA LST2,I    GET NAME 3,4 OF LST ENTRY
0401  04365 053362          CPA ASTYP     CHARS = XX IN DVRXX NAME?
0402  04366 002001          RSS           YES - CONTINUE
0403  04367 026356          JMP LISCN     NO - TRY NEXT LST ENTRY
0404  04370 161130          LDA LST3,I    GET NAME 5 OF LST NAME
0405  04371 010247          AND M7400     ISOLATE UPPER CHAR
0406  04372 050340          CPA UBLNK     CHAR = BLANK?
0407  04373 002001          RSS           YES - CONTINUE
0408  04374 026356          JMP LISCN     NO - TRY NEXT LST ENTRY
0409  04375 161132          LDA LST5,I    GET BP LINK ADDRESS
0410  04376 040310          ADA M2000     ADJUST FOR BP ADDRESS
0411  04377 160000          LDA A,I       GET ABSOLUTE ENTRY POINT ADDR
0412  04400 071550          STA I,XX      SAVE DRIVER ENTRY POINT
0413*
0414  04401 015366          JSB INLST      INITIALIZE LSTX
0415  04402 015372  LCSCN    JSB LSTX      SET LST ADDRESSES
0416  04403 026255          JMP DVERR     C,XX NOT FOUND IN LST
0417  04404 161126          LDA LST1,I    GET NAME 1,2 OF LST ENTRY
0418  04405 051553          CPA CDEC      CHARS = C,?
0419  04406 002001          RSS           YES - CONTINUE
0420  04407 026402          JMP LCSCN     NO - TRY NEXT LST ENTRY
0421  04410 161127          LDA LST2,I    GET NAME 3,4 OF LST ENTRY
0422  04411 053362          CPA ASTYP     CHARS = XX IN DVRXX NAME?
0423  04412 002001          RSS           YES - CONTINUE
0424  04413 026402          JMP LCSCN     NO - TRY NEXT LST ENTRY
0425  04414 161130          LDA LST3,I    GET NAME 5 OF LST NAME
0426  04415 010247          AND M7400     ISOLATE UPPER CHAR
0427  04416 050340          CPA UBLNK     CHAR = BLANK?
0428  04417 002001          RSS           YES - CONTINUE
0429  04420 026402          JMP LCSCN     NO - TRY NEXT LST ENTRY
0430  04421 161132          LDA LST5,I    GET BP LINK ADDRESS
0431  04422 040310          ADA M2000     ADJUST FOR BP ADDRESS
0432  04423 160000          LDA A,I       GET ABSOLUTE COMP, POINT ADDR
0433  04424 071551          STA C,XX      SAVE DRIVER EXIT POINT
0434*
0435  04425 061550          LDA I,XX      GET DRIVER ENTRY POINT
0436  04426 017670          JSB IOTBL     OUTPUT ABSOLUTE DVRXX ENT ADDR
0437  04427 061551          LDA C,XX      GET DRIVER EXIT POINT
0438  04430 017670          JSB IOTBL     OUTPUT ABSOLUTE DVRXX COMP, ADDR
```

```
0439   04431 063356          LDA IODMA      GET DMA CODE
0440   04432 033357          IOR IOBUF     ADD NON RES/RES CODE
0441   04433 033360          IOR IOUNT      ADD UNIT NO.
0442   04434 033355          IOR IOADD      ADD CHANNEL NO.
0443   04435 017670          JSB IOTBL      OUTPUT D,R,U, CHANNEL
0444*
0445   04436 063361          LDA IOTYP      GET EQUIPMENT TYPE CODE
0446   04437 010316          AND M7000      ISOLATE UPPER 7 BITS
0447   04440 002002          SZA            SKIP = TYPE = 0,I
0448   04441 002401          CLA,RSS        SET STATUS = 0, SKIP
0449   04442 060337          LDA BLANK      SET STATUS = 40(8)
0450   04443 033361          IOR IOTYP      ADD EQUIPMENT TYPE CODE
0451   04444 017670          JSB IOTBL      OUTPUT EQUIPMENT TYPE, STATUS
0452*
0453   04445 060263          LDA N13
0454   04446 071322          STA TCNT       SET TEMPORARY COUNT = -6
0455   04447 002400          CLA            SET EQT ENTRY WORD = ZERO
0456   04450 017670          JSB IOTBL      OUTPUT ZERO TO EQT
0457   04451 035322          ISZ TCNT       SKIP = 6 ZEROES OUT
0458   04452 026447          JMP *-3        CONTINUE ZERO OUTPUT
0459   04453 061531          LDA PPREL     GET CURRENT EQT ADDRESS
0460   04454 040240          ADA P17
0461   04455 071531          STA PPREL      SET NEW RELOCATION ADDRESS
0462   04456 034412          ISZ CEQT       INCR EQT ENTRY COUNT
0463   04457 026201          JMP SEQT       PROCESS NEXT EQT RECORD
```

```
0521   04544 040412          ADA CEQT      ADD NO. EQT ENTRIES
0522   04545 002020          SSA           SKIP IF VALID DEV. REF NO.
0523   04546 026537          JMP DRERR     INVALID DEV. REF. NO. (NO EQT)
0524   04547 061075          LDA OCTNO     GET DEV. REF NO.
0525   04550 064414          LDB CSQT      GET CURRENT SQT NO.
0526   04551 044221          ADB N4
0527   04552 006021          SSB,RSS
0528   04553 026556          JMP SESQT     PUT OUT DEV REF NO. TO SQT
0529   04554 002003          SZA,RSS       SKIP IF DEV REF IS NOT ZERO
0530   04555 026537          JMP DRERR     INVALID DEV. REF. NO.
0531   04556 017670  SESQT   JSB IOTBL     OUTPUT SQT ENTRY
0532   04557 035531          ISZ PPREL     INCR CURRENT RELOC ADDRESS
0533   04560 034414          ISZ CSQT      INCR CURRENT SQT COUNT
0534   04561 026474          JMP DEVRE     GET NEXT SQT ENTRY
0535*
0536   04562 014452  SINTT   JSB SPACE     NEW LINE
0537   04563 014452          JSB SPACE     NEW LINE
0538   04564 003400          CCA
0539   04565 040414          ADA CSQT      SUBTRACT 1 FROM SQT COUNT
0540   04566 070414          STA CSQT      SET SQT COUNT
```

```
0542*
0543*                                          SET INTERRUPT TABLE (INT)
0544*
0545  04567 061531          LDA PPREL         GET CURRENT RELOCATION ADDR
0546  04570 070415          STA AINT          SAVE INTERRUPT TABLE ADDRESS
0547  04571 061114          LDA DSKAD         GET CURRENT ABS. CODE DISK ADDR
0548  04572 071543          STA DSKIN         SAVE INT CODE DISK ADDR
0549  04573 061136          LDA DCNT          GET CURRENT ABS. CODE DBUF COUNT
0550  04574 071544          STA INTCN         SAVE INT CODE DISK RECORD COUNT
0551  04575 060240          LDA P17
0552  04576 067314          LDB MES29         MES29 = ADDR. * INT TABLE
0553  04577 114102          JSB DRKEY,I       PRINT: * INTERRUPT TABLE
0554  04600 014452          JSB SPACE         NEW LINE
0555*
0556  04601 015366          JSB INLST         INITIALIZE LSTX
0557  04602 015372  CISCN   JSB LSTX          SET LST ADDRESSES
0558  04603 027575          JMP NOCIC         CIC NOT FOUND IN LST
0559  04604 161126          LDA LST1,I        GET NAME 1,2 OF LST ENTRY
0560  04605 053350          CPA CHRSC         CHARS = SC
0561  04606 002001          RSS               YES = CONTINUE
0001  04607 026602          JMP CISCN         NO = TRY NEXT LST ENTRY
0002  04610 161127          LDA LST2,I        GET NAME 3,4 OF LST ENTRY
0003  04611 053351          CPA CHRIC         CHARS = IC?
0004  04612 002001          RSS               YES = CONTINUE
0005  04613 026602          JMP CISCN         NO = TRY NEXT LST ENTRY
0006  04614 161130          LDA LST3,I        GET NAME 5 OF LST ENTRY
0007  04615 010247          AND M7400         ISOLATE UPPER CHAR
0008  04616 050340          CPA UBLNK         CHAR = BLANK?
0009  04617 002001          RSS               YES = CONTINUE
0010  04620 026602          JMP CISCN         NO = TRY NEXT LST ENTRY
0011  04621 061112          LDA PICHN         SET UP OFFSET ADRESS
0012  04622 030310          IOR M2000          OF PRIVILEGED INTERRUPT
0013  04623 072752          STA PIOCO           I/O SLOT
0014  04624 161132          LDA LST5,I        GET BP LINK ADDRESS
0015  04625 033343          IOR IJSB         ADD JSB 0,I CODE
0016  04626 073367          STA JSCIC         SET JSB CIC,I CODE
0017  04627 065526          LDB FSYBP         GET FWA BP LINKAGE
0018  04630 007004          CMB,INB           COMPLEMENT
0019  04631 075322          STB TCNT          SET TEMPORARY COUNT
0020  04632 064310          LDB M2000         ADJUST FOR FIRST BP ADDRESS
0021  04633 054311  BACK    CPB M2002         DON'T DESTROY LOCATIONS
0022  04634 026642          JMP BUMP           2, 3, OR PRIV INT
0023  04635 054312          CPB M2003
0024  04636 026642          JMP BUMP
0025  04637 056752          CPB PIOCO
0026  04640 002001          RSS
0027  04641 170001          STA B,I           PUT JSB CIC,I IN BP LOCATION
0028  04642 006004  BUMP    INB               INCR CURRENT BP ADDRESS
0029  04643 035322          ISZ TCNT          SKIP = ALL INT LOCATIONS FILLED
0030  04644 026633          JMP BACK
0031  04645 064313          LDB M2006         GET ADDR FOR FIRST INT LOCATION
0032  04646 075527          STB TBREL         SET CURRENT BP ADDRESS
0033*
0034  04647 065055  SETIN   LDB ALBUF
0035  04650 014441          JSB BUFCL         CLEAR LBUF
0036  04651 060277          LDA P128
```

```
0037  04652 065055         LDB ALBUF      GET ADDRESS OF LBUF
0038  04653 114104         JSB DRTTY,I    INPUT INT RECORD
0039  04654 002003         SZA,RSS        SKIP = DATA INPUT
0040  04655 026651         JMP *-4        REPEAT INPUT
0041  04656 017115         JSB GINIT      INITIALIZE LBUF SCAN
0042  04657 060223         LDA N2
0043  04660 017000         JSB GETNA      MOVE 2 CHARS TO TBUF
0044  04661 053236         CPA PTERM      CHARS = /E?
0045  04662 026730         JMP ENDIO      YES = I/O TABLES COMPLETE
0046  04663 017115         JSB GINIT      RE-INITIALIZE LBUF SCAN
0047  04664 060227         LDA P2
0048  04665 017037         JSB GETOC      GET 2 OCTAL DIGITS, CONVERT
0049  04666 026676         JMP CHERR      INVALID INT CHANNEL NO. DIGIT
0050  04667 003004         CMA,INA        MAXIMUM I/O CHANNEL IS
0051  04670 040243         ADA M37          37 OCTAL
0052  04671 002020         SSA
0053  04672 026676         JMP CHERR
0054  04673 016753         JSB GETAL      GET NEXT CHAR FROM LBUF
0055  04674 050337         CPA BLANK      CHAR = COMMA?
0056  04675 027577         JMP SETCH      SAVE INT CHANNEL NO.
0057  04676 063231  CHERR LDA ERR28      SET CODE = INVALID INT CHNL NO.
0058  04677 027612         JMP INTER      PRINT ERROR, REPEAT INPUT
0059*
0060  04700 071322  FILLI STA TCNT       SET NO. OF FILL-INS REQUIRED
0061  04701 002400         CLA            SET INTERRUPT TABLE ENTRY = ZERO
0062  04702 017670         JSB IOTBL      OUTPUT ZERO TO INTERRUPT TABLE
0063  04703 035531         ISZ PPREL      INCR CURRENT INT TABLE ADDRESS
0064  04704 035527         ISZ TBREL      INCR CURRENT INT LOCATION ADDR
0065  04705 035322         ISZ TCNT       SKIP = ALL FILL-INS COMPLETE
0066  04706 026701         JMP FILLI+1    CONTINUE INT FILL-IN
0067*
0068  04707 065324  STINT LDB TBUF+1      GET INT LOCATION CODE
0069  04710 175527         STB TBREL,I    PUT INT LOCATION CODE IN INT LOC
0070  04711 035527         ISZ TBREL      INCR CURRENT BP LOCATION ADDR
0071  04712 065527         LDB TBREL      GET INT LOCATION ADDR
0072  04713 044302         ADB L2000      ADJUST FOR BP ADDR
0073  04714 007004         CMB,INB
0074  04715 045526         ADB FSYBP      ADD ADDR OF FIRST SYS LINK
0075  04716 006021         SSB,RSS        SKIP = INT LOCATION OVERFLOW
0076  04717 026724         JMP NOBPO      SET INT TABLE ENTRY
0077  04720 063234         LDA ERR35      SET CODE = BP INT LOC OVERFLOW
0078  04721 014456         JSB ERROR      PRINT DIAGNOSTIC
0079  04722 014452         JSB SPACE      NEW LINE
0080  04723 124126         JMP AFWAP,I    GET FWA BP LINKAGE
0081*
0082*
0083  04724 061323  NOBPO LDA TBUF        GET INT TABLE CODE
0084  04725 017670         JSB IOTBL      OUTPUT INT TABLE ENTRY
0085  04726 035531         ISZ PPREL      INCR CURRENT RELOCATION ADDR
0086  04727 026647         JMP SETIN      GET NEXT INT TABLE RECORD
0087  04730 060415  ENDIO LDA AINT        GET ADDRESS OF INT
0088  04731 003004         CMA,INA
0089  04732 041531         ADA PPREL      ADD CURRENT RELOCATION ADDR
0090  04733 070416         STA CINT       SAVE NO. INT ENTRIES
0091  04734 066750         LDB N119
0092  04735 055136         CPB DCNT       ANYTHING LEFT TO OUTPUT?
```

```
0093  04736 002001          RSS              =NO
0094  04737 114136          JSB AREMD,I      =YES, DO IT
0095  04740 064257          LDB N128
0096  04741 075136          STB DCNT       RESET TO 128-WORD SECTOR SIZE
0097  04742 014462          JSB SPACE      NEW LINE
0098  04743 014462          JSB SPACE      NEW LINE
0099*
0100  04744 062751          LDA T200,       RESTORE PLIST BUFFER
0101  04745 065061          LDB PLAD         FROM TRACK 200,
0102  04746 014534          JSB DISKI          SECTOR 1
0103  04747 126153          JMP GENIO,I    RETURN = CONTINUE LOADING
0104*
0105  04750 177611  N119     DEC -119
0106  04751 144001  T200,    OCT 144001      TRACK 200, SECTOR 1
0107  04752 000000  PIOCO    NOP
```

```
                                          GET CHAR FROM LBUF, RETURN IN A

* THE FOLLOWING SUBROUTINE SUPPLIES THE CHARACTERS FOR
* GETNA AND GETOC.
*
* CALLING SEQUENCE:
*   A = IGNORED
*   B = IGNORED
*   JSB GETAL
*
* RETURN:
*   A = CURRENT CHARACTER
*   B = DESTROYED
*
04753 000000  GETAL NOP
04754 063372        LDA CMFLG     CMFLG = COMMA-IN FLAG
04755 002003        SZA,RSS       SKIP IF NO COMMA IN
04756 026776        JMP BLRET     RETURN BLANK
04757 067373        LDB BUFUL     GET U/L FLAG
04760 161554  IGNOR LDA CURAL,I   GET CHAR FROM LBUF
04761 006002        SZB           SKIP IF LOWER CHAR
04762 001727        ALF,ALF       ROTATE TO LOWER
04763 010246        AND M377      ISOLATE LOWER CHAR
04764 050225        CPA ZERO      END OF BUFFER?
04765 126753        JMP GETAL,I   YES - RETURN WITH ZERO
04766 007002        CMB,SZB       RESET U/L, SKIP IF UPPER CHAR
04767 035554        ISZ CURAL     INCR LBUF ADDRESS
04770 050337        CPA BLANK     CHAR = BLANK?
04771 026760        JMP IGNOR     IGNORE BLANKS
04772 077373        STB BUFUL     SAVE U/L FLAG
04773 053342        CPA COMMA     CHAR = COMMA?
04774 037372        ISZ CMFLG     RESET FLAG TO SHOW COMMA IN
04775 126753        JMP GETAL,I   RETURN WITH NON-BLANK CHAR
04776 060337  BLRET LDA BLANK     REPLACE WITH BLANK CHAR
04777 126753        JMP GETAL,I   RETURN WITH BLANK
*
                                          MOVE ALPHA FROM LBUF TO TBUF
*
* THE FOLLOWING SUBROUTINE MOVES THE CHARACTERS FROM LBUF
* TO TBUF.
*
* CALLING SEQUENCE:
*   A = MAX. NO. OF CHARACTERS TO BE MOVED.  THE SIGN OF A
*       DESIGNATES THE POSITION OF THE FIRST CHARACTER.
*       IF THE SIGN OF A IS POSITIVE, THE FIRST CHAR IS TO
*       BE MOVED TO THE LOW CHAR IN TBUF.  IF A IS NEGATIVE, THE
*       FIRST CHARACTER IS TO BE MOVED TO THE UPPER CHAR IN TBUF.
*   B = IGNORED
*   JSB GETNA
*
* RETURN:
*   A = FIRST CHAR (IF ONLY 1 CHAR) OR FIRST 2 CHARS MOVED.
*   B = DESTROYED
*
05000 000000  GETNA NOP
```

```
165  05001 002321          CCE,SSA,RSS   SET E = 1 (EVEN) POSITION
166  05002 003104          CMA,CLE,INA   SET E = 0 (ODD) POSITION = COMP
167  05003 071073          STA MAXC      MAXC = MAXIMUM NO. CHARS
168  05004 061060          LDA ATBUF     ATBUF = ADDR OF TBUF
169  05005 071321          STA CURAT     SET CURRENT TBUF ADDRESS
170  05006 006400          CLB
171  05007 075323          STB TBUF      CLEAR WORD 1 OF TBUF
172  05010 003400          CCA
173  05011 073372          STA CMFLG     SET COMMA-IN FLAG
174  05012 002041          SEZ,RSS       SKIP = ODD POSITION
175  05013 027025          JMP OCHAR     BEGIN WITH ODD CHARACTER
176  05014 016753  NEXTC    JSB GETAL     GET CHAR FROM LBUF
177  05015 050225          CPA ZERO      END OF BUFFER?
178  05016 060337          LDA BLANK     YES = REPLACE CHAR WITH BLANK
179  05017 001727          ALF,ALF       ROTATE TO UPPER A
180  05020 171321          STA CURAT,I   SET CHARACTER IN TBUF
181  05021 035073          ISZ MAXC      CHECK FOR ALL CHARS IN
182  05022 027025          JMP OCHAR     GET ODD CHAR FROM LBUF
183  05023 061323          LDA TBUF      GET FIRST 2 TRANSFERRED CHARS
184  05024 127000          JMP GETNA,I   YES = RETURN
185  05025 016753  OCHAR    JSB GETAL     GET CHAR FROM LBUF
186  05026 050225          CPA ZERO      END OF BUFFER*
187  05027 060337          LDA BLANK     REPLACE ZERO CHAR WITH BLANK
188  05030 131321          IOR CURAT,I   ADD TO UPPER CHAR IN TBUF
189  05031 171321          STA CURAT,I   SET CHARS IN TBUF
190  05032 035321          ISZ CURAT     INCR TBUF ADDRESS
191  05033 035073          ISZ MAXC      CHECK FOR ALL CHARS IN
192  05034 027014          JMP NEXTC     NO = TRY NEXT UPPER CHAR
193  05035 061323          LDA TBUF      GET FIRST 2 TRANSFERRED CHARS
194  05036 127000          JMP GETNA,I   RETURN
195*
196*                                     CONVERT OCT/DEC ASCII TO BINARY
197*
198*  THE GETOC SUBROUTINE CONVERTS THE NEXT CHARACTERS IN LBUF FROM
199*  ASCII (DECIMAL OR OCTAL) TO THEIR BINARY VALUE.
200*
201*  CALLING SEQUENCE:
202*    A = MAX. NO. OF CHARS IN CONVERSION REQUEST.  IF A IS
203*        POSITIVE, THE REQUEST IS FOR OCTAL; IF A IS NEGATIVE,
204*        THE REQUEST IS FOR DECIMAL.
205*    B = IGNORED
206*    JSB GETOC
207*
208*  RETURN:
209*    (N+1): INVALID DIGIT OR OVERFLOW IN CONVERSION
210*    (N+2): A = CONVERTED NO.
211*           B = DESTROYED
212*
213  05037 000000  GETOC   NOP
214  05040 064215          LDB L10       GET OCTAL RANGE
215  05041 002020          SSA           SKIP IF OCTAL REQUEST
216  05042 064213          LDB L12       GET DECIMAL RANGE
217  05043 077370          STB DRANG     SET DIGIT RANGE
218  05044 002021          SSA,RSS       SKIP IF DECIMAL REQUEST
219  05045 003004          CMA,INA       SET REQUEST COUNT TO NEGATIVE
220  05046 071073          STA MAXC      SET MAX NO. OF DIGITS
```

```
05047 003400          CCA
05050 073371          STA DIFLG       SET DATA-IN FLAG = NO DATA IN
05051 073372          STA CMFLG       SET COMMA-IN FLAG
05052 002400          CLA
05053 071075          STA OCTNO       OCTNO = OCTAL NUMBER
05054 016753  GETNX    JSB GETAL       GET CHAR FROM LBUF
05055 050225          CPA ZERO        CHAR = ZERO? (END OF BUFFER)
05056 027112          JMP ENDOC       YES - RETURN
05057 050337          CPA BLANK       CHAR = BLANK? (COMMA IN)
05060 027112          JMP ENDOC       YES - RETURN
05061 040301          ADA L60         SUBTRACT 60B FROM CHAR
05062 071074          STA TCHAR       SAVE CHAR
05063 002020          SSA             SKIP IF VALID LOWER LIMIT
05064 027111          JMP DGERR       INVALID DIGIT
05065 043370          ADA DRANG       ADD DIGIT RANGE
05066 002121          CLE,SSA,RSS     CLEAR E - SKIP IF VALID DIGIT
05067 027111          JMP DGERR       INVALID DIGIT
05070 037371          ISZ DIFLG       INCR DATA-IN FLAG, SKIP
05071 000000          NOP
05072 061075          LDA OCTNO       GET PREVIOUS OCTAL NO.
05073 040000          ADA A           SET A = OCTNO X 2
05074 040000          ADA A           SET A = OCTNO X 4
05075 067370          LDB DRANG       GET DIGIT RANGE
05076 054213          CPB L12         RANGE = DECIMAL?
05077 041075          ADA OCTNO       SET A = OCTNO X 5
05100 040000          ADA A           SET A = OCTNO X 10/8
05101 041074          ADA TCHAR       SET A = NEW OCTAL NO.
05102 071075          STA OCTNO       SAVE NEW OCTAL NO.
05103 002040          SEZ             TEST FOR OVERFLOW
05104 027111          JMP DGERR       INVALID NO.
05105 035073          ISZ MAXC        SKIP IF ALL DIGITS PROCESSED
05106 027054          JMP GETNX       GET NEXT DECIMAL DIGIT
05107 037037          ISZ GETOC       INCR RETURN ADDRESS
05110 061075          LDA OCTNO       GET OCTAL EQUIVALENT
05111 127037  DGERR    JMP GETOC,I     RETURN
05112 037371  ENDOC    ISZ DIFLG       SKIP - NO DATA IN
05113 027107          JMP *-4         DATA IN - NORMAL RETURN
05114 127037          JMP GETOC,I     RETURN - ERROR
*
*                                     INITIALIZE CHAR TRANSFER
*
*  THE GINIT SUBROUTINE SETS THE CURRENT ADDRESS AND UPPER/LOWER
*  FLAG FOR SCANNING LBUF.
*
*  CALLING SEQUENCE:
*    A = IGNORED
*    B = IGNORED
*    JSB GINIT
*
*  RETURN : CONTENTS OF A AND B ARE DESTROYED
*
05115 000000  GINIT  NOP
05116 061055          LDA ALBUF       ALBUF = ADDR OF LBUF
05117 071554          STA CURAL       SET CURRENT LBUF ADDRESS
05120 007400          CCB
05121 077373          STB BUFUL       BUFUL = BUFFER U/L FLAG
```

```
1277  05122 127115          JMP GINIT,I   RETURN
1278*
1279*                CONVERTS ASCII A REGISTER TO DECIMAL
1280*
1281*      CALLING SEQUENCE:
1282*          A= ASCII DIGITS
1283*          B= (IGNORED)
1284*          JSB RESCN
1285*
1286*      RETURN:
1287*          VALUE IN A REGISTER
1288  05123 000000  RESCN NOP
1289  05124 071545          STA TEMP      SAVE ASCII DATA
1290  05125 001727          ALF,ALF
1291  05126 010245          AND M177
1292  05127 040301          ADA L60       FORM FIRST DEC DIGIT
1293*     ************************************************************
1294*
1295  05130 070001          STA B         SAVE MULTIPLICAND
1296  05131 001721          ALF,ARS       MULTIPLY BY 8
1297  05132 040001          ADA B         BY 9
1298  05133 040001          ADA B         BY 10
1299*     ************************************************************
1300  05134 071064          STA WDCNT     MULTIPLY BY 10 AND SAVE
1301  05135 061545          LDA TEMP
1302  05136 010245          AND M177
1303  05137 040301          ADA L60       FORM SECOND DEC DIGIT
1304  05140 041064          ADA WDCNT          ADD FIRST DIGIT
1305  05141 127123          JMP RESCN,I  RETURN
1306*
1307*                                     ALLOCATE NEW BP LINK WORD
1308*
1309*  THE ALLOC SUBROUTINE ESTABLISHES ALL THE BP LINKAGE ADDRESSES.
1310*  IF THE ALLOCATED LINK WORD FALLS IN THE SYSTEM COMMUNICATION AREA
1311*  A DISGNOSTIC IS PRINTED.
1312*
1313*  CALLING SEQUENCE:
1314*    A = IGNORED
1315*    B = IGNORED
1316*    JSB ALLOC
1317*
1318*  RETURN:
1319*    A = ALLOCATED BP LINK ADDRESS
1320*    B = DESTROYED
1321*
1322  05142 000000  ALLOC NOP
1323  05143 061527          LDA TBREL     GET NEXT BP ADDRESS
1324  05144 040310          ADA M2000     ADJUST FOR BP ADDRESS
1325  05145 006400          CLB
1326  05146 174000          STB A,I       CLEAR ALLOCATED BP LOCATION
1327  05147 040302          ADA L2000     ADJUST FOR BP ADDRESS
1328  05150 035527          ISZ TBREL     INCR BP RELOCATION ADDR
1329  05151 064000          LDB A
1330  05152 007000          CMB
1331  05153 044110          ADB LWSBP     ADD ADDR OF SYS COMM AREA
1332  05154 006021          SSB,RSS       SKIP = BP FULL
```

```
1333  05155 127142          JMP ALLOC,I    RETURN = NO BP OVERFLOW
1334  05156 071074          STA TCHAR      SAVE CURRENT BP LINK ADDRESS
1335  05157 061252          LDA ERR16      SET ERROR CODE FOR BP OVERFLOW
1336  05160 014456          JSB ERROR      PRINT ERROR MESSAGE
1337  05161 061074          LDA TCHAR      GET BP LINK ADDRESS
1338  05162 127142          JMP ALLOC,I    RETURN
1339*
1340  05163 000000  INBND NOP
1341  05164 073142          STA ALLOC      SAVE VALUE
1342  05165 065055          LDB ALBUF      CLEAR LBUF
1343  05166 014441          JSB BUFCL
1344  05167 060277          LDA P128
1345  05170 065055          LDB ALBUF
1346  05171 114104          JSB DRTTY,I    REQUEST INPUT
1347  05172 002003          SZA,RSS
1348  05173 027167          JMP *-4         NO INPUT - REPEAT
1349  05174 114122          JSB AGINI,I
1350  05175 060232          LDA P5
1351  05176 114121          JSB AGETO,I    CONVERT TO OCTAL
1352  05177 127163          JMP INBND,I      ERROR - RETURN P+1
1353  05200 063142          LDA ALLOC      RESTORE VALUE
1354  05201 003004          CMA,INA        IS VALUE ENTERED >= ORIGINAL?
1355  05202 041075          ADA OCTNO
1356  05203 002020          SSA
1357  05204 127163          JMP INBND,I      NO=ERROR, RETURN P+1
1358  05205 061075          LDA OCTNO        YES= RETURN P+2 WITH "A"
1359  05206 037163          ISZ INBND          REGISTER = OCTAL VALUE
1360  05207 127163          JMP INBND,I
1361*
1362  05210 046127  SYLM   ASC 7,LWA SYS LINKS
1363  05217 000000          NOP
1364  05220 000000          NOP
1365  05221 000000          NOP
```

```
0367*
0368  05222 030071  ERR09 ASC 1,09       PARAMETER NAME ERROR
0369  05223 030460  ERR10 ASC 1,10       PARAMETER TYPE ERROR
0370  05224 031061  ERR21 ASC 1,21       $CIC NOT FOUND IN LST
0371  05225 031064  ERR24 ASC 1,24       INVALID CHANNEL NO. IN EQT REC
0372  05226 031065  ERR25 ASC 1,25       INVALID DRIVER NAME
0373  05227 031066  ERR26 ASC 1,26       INVALID D,B, OR U OPERAND
0374  05230 031067  ERR27 ASC 1,27       INVALID DEVICE REF. NO.
0375  05231 031070  ERR28 ASC 1,28       INVALID INT REC CHANNEL NO.
0376  05232 031071  ERR29 ASC 1,29       INVALID INT CHANNEL NO. ORDER
0377  05233 031461  ERR31 ASC 1,31       INVALID EQT NO. IN INT RECORD
0378  05234 031465  ERR35 ASC 1,35       BP INTERRUPT LOCATION OVERFLOW
0379  05235 031466  ERR36 ASC 1,36       INVALID FINAL OPERAND IN INT REC
0380*
0381  05236 027505  PTERM ASC 1,/E
0382*
0383  05237 005240  MES24 DEF *+1
0384  05240 042516        ASC 11,ENTER PROG PARAMETERS
0385  05253 005254  MES25 DEF *+1
0386  05254 025040        ASC 12,* EQUIPMENT TABLE ENTRY
0387  05270 005271  MES26 DEF *+1
0388  05271 025040        ASC 12,* DEVICE REFERENCE TABLE
0389  05305 005306  MES28 DEF *+1
0390  05306 020040        ASC 6,   * EQT #?
0391  05314 005315  MES29 DEF *+1
0392  05315 025040        ASC 9,* INTERRUPT TABLE
0393*     **************************************************************
0394  05326 021440  MES17 ASC 4,# LINKS?
0395  05332 043127  MES36 ASC 8,FWA USER LINKS?
0396*     **************************************************************
0397*
0398  05342 000054  COMMA OCT 054        COMMA
0399  05343 114000  IJSB  JSB 0,I        I=JSB CODE FOR INTERRUPT LOCS
0400  05344 030000  UASCZ OCT 30000      UPPER ASCII ZERO CHAR
0401  05345 000104  CHARD OCT 104        ASCII CHAR D
0402  05346 000122  CHARR OCT 122       ASCII CHAR R
0403  05347 040000  BIT14 OCT 40000      BIT 14 = 1
0404  05350 022103  CHRSC ASC 1,$C
0405  05351 044503  CHRIC ASC 1,IC
0406  05352 053122  CHAVR ASC 1,VR
0407*
0408  05353 000000  TEMPE BSS 1          PARAMETER ERROR CODE
0409  05354 000000  PARNO BSS 1          PARAMETER RECORD LENGTH
0410*
0411  05355 000000  IOADD BSS 1          I/O ADDR (CHANNEL NO.) IN EQT
0412  05356 000000  IODMA BSS 1          I/O DMA FLAG IN EQT
0413  05357 000000  IOBUF BSS 1          I/O BUFFERING FLAG IN EQT
0414  05360 000000  IOUNT BSS 1          I/O UNIT NO. IN EQT
0415  05361 000000  IOTYP BSS 1          I/O DRIVER TYPE IN EQT (OCTAL)
0416  05362 000000  ASTYP BSS 1          I/O DRIVER TYPE IN EQT (ASCII)
0417  05363 000000  DFLAG BSS 1          DMA=IN FLAG FOR EQT
0418  05364 000000  BFLAG BSS 1          BUFFERING=IN FLAG FOR EQT
0419  05365 000000  UFLAG BSS 1          UNIT=IN FLAG FOR EQT
0420  05366 000000  INTCH BSS 1          INT RECORD CHANNEL NO.
0421  05367 000000  JSCIC BSS 1          JSB CIC,I CODE FOR INTERRUPT LOC
0422*
```

```
1423   05370 000000  DRANG BSS 1          DIGIT RANGE
1424   05371 000000  DIFLG BSS 1          DATA-IN FLAG = -1/0 = NOT IN/IN
1425   05372 000000  CMFLG BSS 1          COMMA FLAG = -1/0 = NOT IN/IN
1426   05373 000000  BUFUL BSS 1          BUFFER U/L FLAG
1427*
1428   05374 000000  DBUF  BSS 128        RELOCATABLE DISC INPUT BUFFER
1429   05574 000000        NOP            INIT. USER DIRECTORY = 0
```

```
0431* THE FOLLOWING 128 WORDS ARE USED FOR INTERRUPT
0432*  ENTRY PROCESSING CODE, AS WELL AS FOR THE PLIST
0433*  BUFFER PRIOR TO BEGINNING THE DISC LOADING
0434*  PHASE, THIS BLOCK IS WRITTEN ONTO TRACK 200,
0435*  SECTOR 0 OF THE DISC. THE DISC LOADING PHASE
0436*  USES PLIST, WHICH DESTROYS THE CODE IN CORE.
0437*  PRIOR TO PROCESSING THE INTERRUPT ENTRIES, THIS
0438*  BLOCK IS READ BACK INTO CORE FROM TRACK 200,
0439*  SECTOR 0.
0440*
0441  05575          PLIST EQU *
0442*
0443  05575 063224   NOCIC LDA ERR21      SET CODE = SCIC NOT FOUND IN LST
0444  05576 014464         JSB IRERR      IRRECOVERABLE ERROR
0445*
0446  05577 061075   SETCH LDA OCTNO      GET INT CHANNEL NO.
0447  05600 073366         STA INTCH      SAVE CHANNEL NO.
0448*
0449  05601 060223         LDA N2
0450  05602 017000         JSB GETNA      MOVE 2 CHARS TO TBUF
0451  05603 053772         CPA CHREQ      CHARS = EQ?
0452  05604 027614         JMP INTEQ      YES - PROCESS INT EQT RECORD
0453  05605 053773         CPA CHREN      CHARS = EN?
0454  05606 027700         JMP INTEN      YES- PROCESS INT ENT RECORD
0455  05607 053774         CPA CHRAB      CHARS = AB?
0456  05610 027750         JMP INABS      YES - PROCESS INT ABS RECORD
0457  05611 063765   IMNEM LDA ERR30      SET CODE = INVALID INT MNEMONIC
0458  05612 014456   INTER JSB ERROR      PRINT DIAGNOSTIC
0459  05613 026647         JMP SETIN      REPEAT INT RECORD PROCESSING
0460*
0461  05614 060223   INTEQ LDA N2
0462  05615 017000         JSB GETNA      MOVE NEXT 2 CHARS TO TBUF
0463  05616 053770         CPA UTCHR      CHARS = T,BLANK?
0464  05617 002001         RSS            YES - CONTINUE
0465  05620 027611         JMP IMNEM      NO - INVALID MNEMONIC
0466*
0467  05621 060223         LDA N2
0468  05622 017037         JSB GETOC      GET 2 DECIMAL DIGITS, CONVERT
0469  05623 027633         JMP EQUER      INVALID EQT NO. IN INT REC
0470  05624 065075         LDB OCTNO      GET EQT TABLE ENTRY NO.
0471  05625 007007         CMB,INB,SZB,RSS   SKIP - VALID LOWER LIMIT
0472  05626 027633         JMP EQUER      INVALID EQT REFERENCE
0473  05627 075074         STB TCHAR      SAVE EQT NO.
0474  05630 044412         ADB CEQT       ADD UPPER EQT REF. NO.
0475  05631 006021         SSB,RSS        SKIP - INVALID UPPER LIMIT
0476  05632 027635         JMP TSTIQ      TEST FOR FIRST EQT REFERENCE
0477  05633 063233   EQUER LDA ERR31      SET CODE = INVALID EQT NO.
0478  05634 027612         JMP INTER      PRINT ERROR, REPEAT INPUT
0479*
0480  05635 065074   TSTIQ LDB TCHAR      GET EQT REF. NO.
0481  05636 060411         LDA AEQT       GET ADDR OF EQT
0482  05637 006007         INB,SZB,RSS    SKIP - NOT FIRST EQT REFERENCE
0483  05640 027644         JMP SEQTI      SET EQT ADDR IN INT TABLE
0484  05641 040240         ADA P17        ADJUST FOR NEXT EQT ENTRY ADDR
0485  05642 006006         INB,SZB        SKIP - EQT ADDRESS FOUND
0486  05643 027641         JMP *-2        CONTINUE EQT SEARCH
```

```
1487  05644 067367  SEQTI LDB JSCIC      GET FSB CIC CODE
1488  05645 071323  COMIN STA TBUF       SAVE INT TABLE CODE
1489  05646 075324       STB TBUF+1      SAVE INT LOCATION CODE
1490  05647 016753       JSB GETAL       GET NEXT CHAR FROM LBUF
1491  05650 050225       CPA ZERO        END OF BUFFER?
1492  05651 027654       JMP COM1         YES - CONTINUE
1493  05652 063235       LDA ERR36       SET CODE = INVALID FINAL OPRND
1494  05653 027612       JMP INTER       PRINT ERROR, REPEAT INPUT
1495*
1496  05654 063366  COM1  LDA INTCH      GET INT CHANNEL NO.
1497  05655 003004       CMA,INA
1498  05656 040302       ADA L2000       ADJUST FOR BP LOCATION ADDR
1499  05657 041527       ADA TBREL       ADD CURRENT BP ADDRESS
1500  05660 002003       SZA,RSS         SKIP - NOT NEXT LOCATION
1501  05661 026707       JMP STINT       SET INTERRUPT TABLES, LOCATION
1502  05662 002020       SSA             SKIP - INVALID CHANNEL NO, ORDER
1503  05663 026700       JMP FILLI       FILL IN SKIPPED VALUES
1504  05664 063232       LDA ERR29       SET CODE = INVALID INT CHNL ORDR
1505  05665 014456       JSB ERROR       PRINT DIAGNOSTIC
1506  05666 014452       JSB SPACE       NEW LINE
1507  05667 026647       JMP SETIN       GET NEXT INTERRUPT RECORD
1508*
1509  05670 000000  IOTBL NOP
1510  05671 066750       LDB N119
1511  05672 074257       STB N128        SIMULATE 119-WORD SECTOR
1512  05673 006404       CLB,INB         SET COUNT = 1
1513  05674 114135       JSB ALABD,I     OUTPUT 1 WORD OF ABS CODE
1514  05675 064303       LDB .N128
1515  05676 074257       STB N128        RESET SECTOR SIZE TO 128 WORDS
1516  05677 127670       JMP IOTBL,I
1517*
1518  05700 060223  INTEN LDA N2
1519  05701 017000       JSB GETNA       MOVE 2 CHARS TO TBUF
1520  05702 053770       CPA UTCHR       CHARS = T,BLANK?
1521  05703 002001       RSS             YES - CONTINUE
1522  05704 027611       JMP IMNEM       NO - INVALID INT MNEMONIC
1523  05705 060220       LDA N5
1524  05706 017000       JSB GETNA       MOVE 5 CHARS TO TBUF
1525*
1526  05707 015366       JSB INLST       INITIALIZE LSTX
1527  05710 015372  ENSCN JSB LSTX       SET LST ADDRESSES
1528  05711 027741       JMP ENERR       INVALID ENTRY POINT
1529  05712 161126       LDA LST1,I      GET NAME 1,2 OF LST ENTRY
1530  05713 051323       CPA TBUF        CHARS EQUAL?
1531  05714 002001       RSS             YES - CONTINUE
1532  05715 027710       JMP ENSCN       NO - TRY NEXT LST ENTRY
1533  05716 161127       LDA LST2,I      GET NAME 3,4 OF LST ENTRY
1534  05717 051324       CPA TBUF+1      CHARS EQUAL?
1535  05720 002001       RSS             YES - CONTINUE
1536  05721 027710       JMP ENSCN       NO - TRY NEXT LST ENTRY
1537  05722 161130       LDA LST3,I      GET NAME 5 OF LST ENTRY
1538  05723 010247       AND M7400       ISOLATE UPPER CHAR
1539  05724 051325       CPA TBUF+2      CHARS EQUAL?
1540  05725 002001       RSS             YES - CONTINUE
1541  05726 027710       JMP ENSCN       NO - TRY NEXT LST ENTRY
1542  05727 161131       LDA LST4,I      GET IDENT ADDRESS
```

```
0543  05730 002003          SZA,RSS       SKIP = ENT 15 DEFINED
0544  05731 027741          JMP ENERR     INVALID ENTRY POINT
0545  05732 071071          STA TIDNT     SET IDENT ADDRESS OF PROGRAM
0546  05733 015333          JSB IDX       SET IDENT ADDRESSES
0547  05734 102000          HLT 0         END OF IDENT LIST
0548  05735 161124          LDA ID6,I     GET PROGRAM TYPE
0549  05736 010245          AND M177      ISOLATE TYPE
0550  05737 002003          SZA,RSS       SKIP = NOT SYSTEM PROGRAM
0551  05740 027743          JMP SETEN     SET ENTRY POINT ADDRESSES
0552  05741 063766  ENERR LDA ERR33      SET CODE = INVALID ENTRY POINT
0553  05742 027612          JMP INTER     PRINT ERROR, REPEAT INPUT
0001*
0002  05743 161132  SETEN LDA LST5,I     GET BP LINK ADDRESS
0003  05744 033343          IOR IJSB      ADD JSB 0,I CODE
0004  05745 070001          STA B
0005  05746 002400          CLA           SET INT ENTRY = ZERO
0006  05747 027645          JMP COMIN     SET INTERRUPT TABLE, LOCATION
0007*
0008  05750 060223  INABS LDA N2
0009  05751 017000          JSB GETNA     MOVE 2 CHARS TO TBUF
0010  05752 053771          CPA USCHR     CHARS = S,BLANK?
0011  05753 002001          RSS           YES = CONTINUE
0012  05754 027611          JMP IMNEM     NO = INVALID INT MNEMONIC
0013  05755 060233          LDA P6
0014  05756 017037          JSB GETOC     GET 6 OCTAL DIGITS, CONVERT
0015  05757 027763          JMP ABERR     INVALID ABS DIGIT
0016  05760 002400          CLA
0017  05761 065075          LDB OCTNO     GET ABSOLUTE VALUE
0018  05762 027645          JMP COMIN
0019*
0020  05763 063767  ABERR LDA ERR34      SET CODE = INVALID ABS DIGIT
0021  05764 027612          JMP INTER     PRINT ERROR, REPEAT INPUT
0022*
0023  05765 031460  ERR30 ASC 1,30       INVALID INT MNEMONIC
0024  05766 031463  ERR33 ASC 1,33       INVALID INT ENT ENTRY
0025  05767 031464  ERR34 ASC 1,34       INVALID INT ABS ENTRY
0026  05770 052040  UTCHR ASC 1,T
0027  05771 051440  USCHR ASC 1,S
0028  05772 042521  CHREQ ASC 1,EQ
0029  05773 042516  CHREN ASC 1,EN
0030  05774 040502  CHRAB ASC 1,AB
```

```
0032  06000                ORG 6000B
0033*
0034*                                        LOAD ABSOLUTE SYSTEM
0035*
0036*  THIS SECTION OF CODE CONTROLS THE GENERATION OF
0037*  THE ABSOLUTE CODE FOR THE SYSTEM.  EACH PROGRAM
0038*  IS LOADED BY TYPE AS FOLLOWS:
0039*
0040*    (1) SYSTEM--TYPE 0
0041*    (2) EXEC MODULES--TYPE 1
0042*    (3) AVAILABLE--TYPE 2
0043*    (4) BK DISC RESIDENT--TYPE 3
0044*    (5) IO DRIVER MODULES--TYPE 4
0045*    (6) BK DISC SEGMENTS--TYPE 5
0046*
0047*  EACH TYPE OF PROGRAM IS LOADED IN THE FOLLOWING MANNER:
0048*
0049*  (1) THE IDENTIFICATION BLOCK FOR THE PROGRAM IS LOCATED
0050*  IN IDENT.  A CALL TO LOAD IS EXECUTED TO LOAD THIS PROGRAM AND
0051*  ALL CALLED SUBROUTINES.  IF THE PROGRAM IS DISK RESIDENT,
0052*  THE BASE PAGE SECTION OF CODE IS WRITTEN ON THE DISK
0053*  IMMEDIATELY AFTER THE MAIN SECTION OF CODE.
0054*  IF THE PROGRAM IS
0055*  A USER PROGRAM (OTHER THAN SYSTEM USER PROGRAM) AN ID SEGMENT IS
0056*  GENERATED.  FINALLY, THE BASE PAGE LINKAGE ADDRESSES ARE MADE
0057*  UNAVAILABLE TO SUBSEQUENT PROGRAMS IF THE PROGRAM IS DISK RESIDEN
0058*
0059*  THIS ENTIRE PAGE IS WRITTEN ONTO TRACK 201 OF THE
0060*  DISC PRIOR TO THE PROGRAM INPUT PHASE, AND &
0061*  RESTORED INTO CORE FOLLOWING THE PROGRAM INPUT
0062*  PHASE.
0063*
0064*  THE 256-WORD BLOCK OF CODE STARTING AT SLINK IS
0065*  WRITTEN ONTO TRACK 202 OF THE DISC, THEN DESTROYED
0066*  BY THE LOAD I/O DRIVERS SECTION.
0067*
0068*
0069*  THE ALLOCATION OF MEMORY TO THE SYSTEM IS GIVEN BELOW:
0070*
```

```
0072*****************************************************************
0073*                    USER PROGRAM AREA (MAIN AND SEGMENTS)
0074*                    SYSTEM OVERLAYS (JOB AND FILE MANAGER)
0075*
0076**************END OF SYSTEM MEMORY PROTECTED AREA*******************
0077*
0078*                    EQUIP,DEVICE REFERENCE,INTERRUPT TABLES
0079*
0080*****************************************************************
0081*
0082*                    I/O DRIVER OVERLAY AREA
0083*
0084*****************************************************************
0085*
0086*                    EXEC SUPERVISOR OVERLAY AREA
0087*
0088*****************************************************************
0089*
0090*                    TELETYPE DRIVER
0091*
0092*****************************************************************
0093*
0094*                    DISC DRIVER
0095*
0096*****************************************************************
0097*
0098*                    I/O SUPERVISOR
0099*
0100*****************************************************************
0101*
0102*                    EXEC SUPERVIOSR
0103*
0104*****************************************************************
0105*
0106*                    CENTRAL INTERRUPT COSTROLLER*
0107*
0108*****************************************************************
0109*
0110*                    USER PROGRAM LINKAGE AREA
0111*
0112*****************************************************************
0113*
0114*                    SYSTEM LINKAGE AREA
0115*
0116*****************************************************************
0117*
0118*                    SYSTEM COMMUNICATION AREA
0119*
0120**************(OCTAL LOCATION 100)*********************************
0121*
0122*                    SYSTEM CONSTANTS
0123*
0124**************(OCTAL LOCATION 40)**********************************
0125*
0126*                    INTERRUPT LOCATOONS
0127*
```

0128**********(OCTAL LOCATION 2)**********

```
0130*
0131*  # LINKS?    ENTER 3 DECIMAL DIGITS
0132*
0133  06000 060355  FWENT LDA TR202
0134  06001 064345        LDB INWRT
0135  06002 074347        STB DWRT
0136  06003 064403        LDB INFLG      IS THE FOLLOWING SECTION OF
0137  06004 004065        CLE,ERB
0138  06005 074403        STB INFLG
0139  06006 002200        CME
0140  06007 017643        JSB TMPIO       =NO, LOAD IT IN
0141*
0142  06010 014452  SLINK JSB SPACE
0143  06011 060235        LDA P8
0144  06012 064153        LDB AMS17
0145  06013 114102        JSB DRKEY,I
0146  06014 065055        LDB ALBUF
0147  06015 014441        JSB BUFCL
0148  06016 060277        LDA P128
0149  06017 065055        LDB ALBUF
0150  06020 114104        JSB DRTTY,I
0151  06021 002003        SZA,RSS
0152  06022 026016        JMP *+4
0153  06023 061556        LDA LBUF       WAS "BLANK" ENTERED?
0154  06024 051314        CPA BLNKS
0155  06025 026040        JMP SL1          YES=DEFAULT MAX # LINKS
0156  06026 114122        JSB AGINI,I
0157  06027 060222        LDA N3
0158  06030 114121        JSB AGETO,I
0159  06031 026010        JMP SLINK
0160  06032 114117        JSB AGETA,I
0161  06033 050225        CPA ZERO
0162  06034 002001        RSS
0163  06035 026010        JMP SLINK
0164  06036 061075        LDA OCTNO
0165  06037 002001        RSS
0166  06040 063624  SL1   LDA MAGIC      SET DEFAULT=MAX # LINKS
0167  06041 070373        STA NLINK      SET # OF LINKS
0168*
0169*                                    SET FWA BP LINKAGE
0170  06042 064337        LDB BLANK
0171  06043 044374        ADB NCONS      # COMMONLY USED CONSTANTS
0172  06044 044375        ADB NSYSC     NUMBER OF SYSTEM CONSTANTS
0173  06045 075526        STB FSYBP      SET ADDR OF FIRST SYS LINK
0174  06046 044373        ADB NLINK
0175  06047 044302        ADB L2000
0176  06050 006021        SSB,RSS
0177  06051 026010        JMP SLINK
0178  06052 014452        JSB SPACE      NEW LINE
0179*
0180*                                    CLEAR LST WORD 5
0181  06053 015366        JSB INLST      INITIALIZE LST ADDRESSES
0182  06054 015372  CLLST JSB LSTX       SET LST ADDRESSES
0183  06055 026064        JMP CLRID-1    CLEAR USAGE FLAGS
0184  06056 002400        CLA
0185  06057 171132        STA LST5,I     CLEAR LST WORD 5
```

```
0186   06060 161130         LDA LST3,I     GET WORD 3 OF LST ENTRY
0187   06061 010247         AND M7400      ISOLATE UPPER CHARACTER
0188   06062 171130         STA LST3,I     SET LST WORD 3 WITH NO ORDINAL
0189   06063 026054         JMP CLLST      CONTINUE CLEARING LST
0190*                                      CLEAR PROGRAM USAGE FLAGS
0191   06064 015327         JSB INIDX      INITIALIZE IDENT ADDRESSES
0192   06065 015333  CLRID  JSB IDX        SET IDENT ADDRESSES
0193   06066 026073         JMP IDCLR      ALL IDENT FLAGS CLEAR
0194   06067 161121         LDA ID3,I      GET USAGE FLAG
0195   06070 010247         AND M7400      SET FLAG = ZERO
0196   06071 171121         STA ID3,I      SET CLEARED USAGE FLAG
0197   06072 026065         JMP CLRID      CLEAR NEXT IDENT FLAG
0198*
0199*                                      CLEAR PAGE 1 FOR INDIRECT LINKS
0200   06073 060302  IDCLR  LDA L2000
0201   06074 071064         STA WDCNT      SET WORD COUNT = 2000(8)
0202   06075 002400         CLA
0203   06076 064310         LDB M2000      GET ADDRESS OF PAGE 1
0204   06077 170001  CLRBP  STA B,I        CLEAR WORD IN BASE PAGE AREA
0205   06100 006004         INB            INCR PAGE ADDRESS
0206   06101 035064         ISZ WDCNT      SKIP - AREA CLEARED
0207   06102 026077         JMP CLRBP      CONTINUE CLEARING
```

```
1209*
1210*                                          LOAD INITIALIZATION
1211   06103 002400          CLA
1212   06104 071532          STA RELAD        CLEAR RELOCATION ADDR FOR LABDO
1213   06105 071054          STA COMAD        CLEAR COMMON RELOC BASE
1214   06106 071525          STA PTYPE        SET PROGRAM TYPE = SYSTEM
1215   06107 071144          STA URBP         CLEAR UPPER RESIDENR BP BOUND
1216   06110 071145          STA LBBP         CLEAR LOW BACKGROUND BP BOUND
1217   06111 071146          STA UBBP         CLEAR HIGH BACKGROUND BP BOUND
1218   06112 070402          STA IDFLG        CLAAR # ID SEG/SECTOR FLG
1219   06113 061526          LDA FSYBP        GET FIRST WORD AVAIL BP LINKAGE
1220   06114 071143          STA LRBP         CLEAR LOW RESIDENT BP BOUND
1221   06115 071530          STA PBREL        SET BP RELOC ADDR
1222   06116 040373          ADA NLINK            # YSER LINKS
1223   06117 070377          STA UPLNK      UPPER LIMIT OF LINKAGES
1224   06120 070110          STA LWSBP
1225   06121 002004          INA
1226   06122 071531          STA PPREL
1227   06123 073710          STA LRMAN        SET LOWER RESIDENT MAIN ADDR
1228   06124 060257          LDA N128
1229   06125 071136          STA DCNT         INITIALIZE ABSOLUTE OUTPUT COUNT
0230   06126 065056          LDB ADBUF        GET ADDRESS OF DBUF
0231   06127 075135          STB CURAD        SET CURRENT DBUF ADDRESS
0232   06130 060371          LDA DSKAB        GET INITIAL ABSOLUTE DISK ADDR
0233   06131 071114          STA DSKAD        SET CURRENT ABSOLUTE DISK ADDR
0234   06132 071524          STA DSKID      SET INITIAL ID SEG DISC ADDRESS
0235*              SET ASIDE ROOM ON DISC FOR SYSTEM DIRECTORY
0236*     ********************************************************************
0237   06133 002400          CLA
0238   06134 065523          LDB LICNT        ESTIMATED # OF ID SEGMENTS
0239   06135 007004          CMB,INB          MAKE NEG
0240   06136 002004  CLRB1   INA              INCREMENT MULTIPLE OF 5 COUNTER
0241   06137 044265          ADB P11          ADD 11 TILL POS
0242   06140 006020          SSB              EXIT IF POS
0243   06141 026136          JMP CLRB1        LOOP
0244   06142 010320          AND M1777
0245   06143 001722          ALF,RAL
0246   06144 001222          RAL,RAL
0247*     ********************************************************************
0248   06145 006400          CLB
0249   06146 114132          JSB ABPOT,I  OUTPUT AREA ON DISC FOR SYS DIR.
0250   06147 061114          LDA DSKAD          SAVE CURRENT DISC ADDRESS
0251   06150 073712          STA DSKRR
```

```
1253*
1254*                                          LOAD SYSTEM
1255   06151 060346          LDA IPWRT         SET UP TO PROTECT
1256   06152 070347          STA DWRT            SYSTEM AREA OF DISC
1257   06153 014452          JSB SPACE         NEW LINE
1258   06154 060233          LDA P6
1259   06155 064156          LDB MES12         MES12 = ADDR: SYSTEM
1260   06156 017625          JSB SETHD         PRINT HEADING, INITIALIZE IDX
1261   06157 114134  SYLD    JSB AIDSN,I       SCAN IDENTS
1262   06160 026172          JMP SYEND         END OF IDENTS
1263   06161 165121          LDB ID3,I         GET USAGE FLAG
1264   06162 006014          SLB,INB           SKIP IF UNUSED
1265   06163 026157          JMP SYLD          IGNORE USED PROGRAM
1266   06164 175121          STB ID3,I         SET WORD 3 WITH USAGE FLAG
1267   06165 114130          JSB ALOAD,I       INITIATE AND LOAD MAIN PROGRAM
1268   06166 017635          JSB INCAD         UPDATE BP, PROG RELOC ADDR
1269   06167 061527          LDA TBREL         GET CURRENT BP ADDRESS
1270   06170 071144          STA URBP          SET UPPER RESIDENT BP BOUND
1271   06171 026157          JMP SYLD          PROCESS NEXT SYSTEM PROGRAM
1272*
0273   06172 114141  SYEND   JSB ANOTS,I       TEST FOR PROGRAMS LOADED
0274*
1275*                                          SCAN LST FOR INITIAL ENTRY POINT
0276   06173 015366          JSB INLST         INITIALIZE LSTX
0277   06174 015372  STSCN   JSB LSTX          SET LST ADDRESSES
0278   06175 102000          HLT 0B            START NOT FOUND IN LST
0279   06176 161126          LDA LST1,I        GET NAME 1,2
0280   06177 053703          CPA CHR$S         CHAR$ = $$?
0281   06200 002001          RSS               YES = CONTINUE
0282   06201 026174          JMP STSCN         NO = TRY NEXT LST ENTRY
0283   06202 161127          LDA LST2,I        GET NAME 3,4
0284   06203 053704          CPA CHRTR         CHAR$ = TR?
0285   06204 002001          RSS               YES = CONTINUE
0286   06205 026174          JMP STSCN         NO = TRY NEXT LST ENTRY
0287   06206 161130          LDA LST3,I        GET NAME 5
0288   06207 010247          AND M7400         ISOLATE UPPER CHAR
0289   06210 053702          CPA UCHRT         CHAR = T?
0290   06211 002001          RSS               YES = START FOUND
0291   06212 026174          JMP STSCN         NO = TRY NEXT LST ENTRY
0292   06213 064311          LDB M2002         GET ADDR FOR JMP,I START
0293   06214 063701          LDA JMP3I         GET JMP 3,I CODE
0294   06215 170001          STA B,I           SET JMP 3,I IN BP LOCATION
0295   06216 006004          INB               INCR CURRENT BP ADDRESS
0296   06217 161132          LDA LST5,I        GET BP ADDR FOR START
0297   06220 040310          ADA M2000         ADJUST FOR BP ADDRESS
0298   06221 160000          LDA A,I           GET ABSOLUTE ENTRY POINT ADDR
0299   06222 170001          STA B,I           SET ADDR OF START IN BP LOCATION
0300   06223 061530          LDA PBREL
0301   06224 073706          STA UBPSY       SAVE UPPER SYS BP ADDRESS
0302   06225 114136          JSB AREMD,I     OUTPUT REMAINDER OF RES SYSTEM
0303   06226 061114          LDA DSKAD             SAVE I-O TABLES DISC ADDR
0304   06227 073715          STA DSKBG             FOR SYS LOADER
0305   06230 061531          LDA PPREL             AAVE LOW I/O TABLE MEMORY
0306   06231 073713          STA LBMAN             ADDR FOR SYS LOADER
0307   06232 073711          STA URMAN             SAVE HI MAIN ADDR
0308*
```

```
309   06233 114116          JSB AGNIO,I    SET I/O TABLES
310   06234 061531          LDA PPREL
311   06235 073753          STA EXMLC
312   06236 073716          STA DSKEL
313*
314*      COUNT # EXEC MODULES FOR SETTING DOUBLET TABLE SPACE
315   06237 002400          CLA
316   06240 073752          STA EXCN#      CLEAR EX MODULE COUNTER
317   06241 002004          INA
318   06242 071525          STA PTYPE      SET SCAN TYPE
319   06243 003400          CCA
320   06244 071536          STA LFLAG      INIT SCAN PARAMETERS
321   06245 061070          LDA BIDNT
322   06246 071541          STA CIDNT
323   06247 114134          JSB AIDSN,I    SCAN FOR EX MODULES
324   06250 026253          JMP *+3            *DONE*
325   06251 037752          ISZ EXCN#          *MODULE FOUND
326   06252 026247          JMP *-3        GO SEARCH FOR NEXT MODULE
327   06253 063752          LDA EXCN#      # OF EX MODULES
328   06254 001200          RAL                 X 2 WORDS FOR EACH MODULE
329   06255 041531          ADA PPREL      ADD TO CURRENT ADDRESS AND SET
330   06256 071531          STA PPREL           FOR PROG LOADING
331   06257 073717          STA DSKEU
332   06260 061531          LDA PPREL          SAVE HI IO TABLE MEMORY
333   06261 073714          STA UBMAN          ADDR FOR SYS LOADER
334   06262 065057          LDB AIBUF      SET ID SEGMENT BUFFER ADDRESS
335   06263 075756          STB CURAI
336   06264 014441          JSB BUFCL      CLEAR ID SEGMENT BUFFER
337   06265 060257          LDA N128       SET ID SEGMENT BUFFER COUNT
338   06266 071757          STA ICNT
```

```
340*                LOAD EX MODULES
341   06267 063620          LDA L70
342   06270 071064          STA WDCNT          BUFFER
343   06271 064211          LDB EXDEF
344   06272 002400          CLA
345   06273 170001          STA B,I
346   06274 006004          INB
347   06275 035064          ISZ WDCNT
348   06276 026273          JMP *-3
349   06277 060211          LDA EXDEF     SET EXMOD PARAMETER STORAGE
350   06300 070417          STA MCNT           BUFFER ADDRESS
351   06301 002400          CLA           CLEAR
352   06302 070401          STA MAXPX          MAX EX MOD PROG LENGTH
353   06303 073762          STA MAXBX          MAX EX MOD RES BP LENGTH
354   06304 060274          LDA P23
355   06305 064157          LDB ME815
356   06306 017625          JSB SETHD     PRINT HEADING, INIT IDX
357   06307 114134  EXLD    JSB AIDSN,I   SCAN IDENTS FOR EXEC MODULES
358   06310 026376          JMP EXNND          END OF SCAN
359   06311 161117          LDA ID1,I      CHECK IF NAME IS -EX-
360   06312 050357          CPA ASCEX
361   06313 002001          RSS                YES, SO LEGAL NAME
362   06314 026307          JMP EXLD           NO, SO IGNORE
363   06315 161121          LDA ID3,I
364   06316 010247          AND M7400
365   06317 001727          ALF,ALF
366   06320 070001          STA B
367   06321 161120          LDA ID2,I      LOAD A WITH -NN-
368   06322 010246          AND M377
369   06323 001727          ALF,ALF
370   06324 030001          IOR B
371   06325 114152          JSB ARESC,I    CONVERT TO DECIMAL
372   06326 170417          STA MCNT,I     SAVE MODULE #
373   06327 061114          LDA DSKAD
374   06330 070420          STA MCNT+1     SAVE DISC TRACK/SECTOR #
375   06331 114130          JSB ALOAD,I   INIT AND LOAD MAIN PROGRAM
376   06332 114137          JSB AGEND,I   GENERATE ID SEGMENT
377   06333 061531          LDA PPREL     GET PROG RELOC ADDR
378   06334 003004          CMA,INA
379   06335 041052          ADA TPREL     CURRENT PROG LENGTH
380   06336 070421          STA MCNT+2     CURRENT MODULE WORD LENGTH
381   06337 064401          LDB MAXPX     CURRENT LARGEST PROG LENGTH
382   06340 007004          CMB,INB
383   06341 044000          ADB A
384   06342 006021          SSB,RSS
385   06343 070401          STA MAXPX     SET NEW MAX PROG LENGTH
386   06344 061530          LDA PBREL     GET BP RELOC ADDRESS
387   06345 003004          CMA,INA
388   06346 041527          ADA TBREL     CURRENT BASE PAGE LENGTH
389   06347 067762          LDB MAXBX
390   06350 007004          CMB,INB
391   06351 044000          ADB A
392   06352 006021          SSB,RSS
393   06353 073762          STA MAXBX     SET NEW MAX BP LENGTH
394   06354 114136          JSB AREMD,I OUTPUT REMAINDER OF ABS REC
395   06355 061527          LDA TBREL          UPPER BP ADDRESS
```

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1396  06356 006530          LDB PBREL          LOWER BP ADDRESS
1397  06357 114132          JSB ABPOT,I  OUTPUT BP SECTION
1398  06360 061530          LDA PBREL          LOWER BP ADDRESS
1399  06361 006527          LDB TBREL          UPPER BP ADDRESS
1400  06362 114133          JSB ACLRT,I  CLEAR LOCAL BASE PAGE LINKS
1401  06363 060421          LDA MCNT+2
1402* ****************************************************************
1403  06364 040245          ADA M177
1404  06365 010317          AND M7600     PICK UP HIGH 9 BITS
1405  06366 001700          ALF
1406* ****************************************************************
1407  06367 130417          IOR MCNT,I
1408  06370 170417          STA MCNT,I
1409  06371 034417  EXAD    ISZ MCNT
1410  06372 060420          LDA MCNT+1
1411  06373 170417          STA MCNT,I
1412  06374 034417          ISZ MCNT
1413  06375 026307          JMP EXLD      GO TO PROCESS NEXT EX MOD
1414  06376 114141  EXNND   JSB ANOTS,I TEST FOR PROGRAMS LOADED
1415  06377 014452          JSB SPACE
1416  06400 061530          LDA PBREL     GET BP RELOC ADDR
1417  06401 073756          STA EXBS1      LOW BASE ADDR OF EX MODULE
1418  06402 043762          ADA MAXBX     ADD MAX BP LENGTH
1419  06403 073731          STA SYBAD     SET ADDR OF I/O MOD BP LINKS
1420  06404 073757          STA EXBS2      HI  BASE ADDR OF EX MODULE
1421  06405 071530          STA PBREL
1422  06406 073734          STA IOMBS
1423  06407 061531          LDA PPREL     GET PROG RELOC ADDRESS
1424  06410 073754          STA EXMN1      LOW MAIN ADDR OF EX MODULE
1425  06411 040401          ADA MAXPX     ADD MAX PROG LENGTH
1426  06412 073723          STA SYMAD     SET ADDR OF I/O MOD PROG
1427  06413 073755          STA EXMN2      HI  BASE ADDR OF EX MODULE
1428  06414 071531          STA PPREL
1429  06415 073735          STA IOMMS
1430*
```

```
0432*                LOAD I/O DRIVER MODULES
0433   06416 060231          LDA P4
0434   06417 071525          STA PTYPE
0435   06420 002700          CLA,CCE          CLEAR
0436   06421 073763          STA MAXPI             MAX I/O DRIVER PROG LENGTH
0437   06422 073764          STA MAXBI             MAX I/O DRIVER BP LENGTH
0438*
0439*      READ IN EQT TABLE TO INSERT NECESSARY ADDRESSES OF
0440*                     INITIATION, CONTINUATION, UPPER MAIN MEMORY BOUND
0441*                     UPPER BASE MEMORY BOUND, TRACK/SECTOR ADDRESS
0442*
0443   06423 034403          ISZ INFLG        SET CODING FLAG = OUT
0444*
0445   06424 060272          LDA P20
0446   06425 064160          LDB MES19
0447   06426 017625          JSB SETHD        PRINT HEADING, INIT IDX
0448   06427 114134  IODLD    JSB AIDSN,I      SCAN IDENTS FOR I/O DRIVERS
0449   06430 026657          JMP IODND             END OF SCAN
0450   06431 165121          LDB ID3,I        GET USEAGE FLAG
0451   06432 006014          SLB,INB
0452   06433 026427          JMP IODLD        PROG ALREADY LOADED
0453   06434 175121          STB ID3,I        UPDATE USEAGE FLAG
0454   06435 061114          LDA DSKAD
0455   06436 071547          STA TEMP+2       SAVE CURRENT DISC ADDRESS
0456*
0457*     FORM AND STORE CHAR 4 AND 5 OF NAME FOR
0458*          EQT TABLE SEARCH
0459   06437 161120          LDA ID2,I        GET CHAR 3,4 OF PROG
0460   06440 010245          AND M177              MASK OFF ALL BUT CHAR 4
0461   06441 001727          ALF,ALF               SHIFT INTO UPPER CHAR POSI
0462   06442 071545          STA TEMP              SAVE
0463   06443 001727          ALF,ALF
0464   06444 040301          ADA L60
0465   06445 001723          ALF,RAR
0466   06446 071546          STA TEMP+1       FORM AND STORE OCTAL EQUIV
0467   06447 161121          LDA ID3,I        GET CHAR 5 AND TYPE
0468   06450 001727          ALF,ALF
0469   06451 010245          AND M177              MASK OFF ALL BUT CHAR 5
0470   06452 021545          XOR TEMP
0471   06453 071545          STA TEMP         I,XX AND C,XX NAME IN ASCII
0472   06454 161121          LDA ID3,I
0473   06455 001727          ALF,ALF
0474   06456 010245          AND M177
0475   06457 040301          ADA L60
0476   06460 021546          XOR TEMP+1
0477   06461 071546          STA TEMP+1       I,XX AND C,XX NAME IN OCTAL
0478   06462 060412          LDA CEQT         SETUP LOOP COUNT
0479   06463 003004          CMA,INA
0480   06464 070407          STA EQCNT
0481   06465 063715          LDA DSKBG
0482   06466 073736  .FNXT    STA EQCUR         SAVE CURRENT EQT SECTOR ADDRESS
0483   06467 064150          LDB TEMBF
0484   06470 014534          JSB DISKI         READ IN EQT SECTOR
0485   06471 064150          LDB TEMBF        EQT BUFFER ADDRESS
0486   06472 044230          ADB P3
0487*
```

```
0488  06473 160001  FNEXT LDA B,I       GET AV,EQT TYPE,STATUS WORD
0489  06474 001727        ALF,ALF
0490  06475 010244        AND M77       ISOLATE EQR TYPE
0491  06476 051546        CPA TEMP+1     CHECK IF DESIRED PROG
0492  06477 026520        JMP FOUND
0493  06500 044240  FNXTX ADB P17
0494  06501 054151        CPB TEMBX      END OF SECTOR?
0495  06502 026510        JMP EQNXT       -YES, GET NEXT ONE
0496  06503 034407        ISZ EQCNT      CHECK IF ALL PROCESSED
0497  06504 026473        JMP FNEXT          NO SO GO TO NEXT
0498  06505 034512  FNXTY ISZ LBCNT
0499  06506 027614        JMP EQERR
0500  06507 026623        JMP IOLOD      GO LOAD DRIVER
0501*
0502  06510 063736  EQNXT LDA EQCUR
0503  06511 064150        LDB TEMBF
0504  06512 114127        JSB ADOUT,I    OUTPUT CURRENT EQT SECTOR
0505  06513 063736        LDA EQCUR
0506  06514 014513        JSB DISKA      GET NEXT EQT SECTOR ADDRS
0507  06515 034407        ISZ EQCNT
0508  06516 026466        JMP .FNXT        AND GO READ IT IN
0509  06517 026505        JMP FNXTY
0510*
0511  06520 044222  FOUND ADB N3        FORM AND STORE
0512  06521 077721        STB XPPPP          EQT ADDRESS
0513  06522 034512        ISZ LBCNT      1ST EQT FOR THIS DRIVER?
0514  06523 002001        RSS             -YES, LOAD IT
0515  06524 026577        JMP IOSSN       -NO, SKIP LOADING
0516  06525 114130        JSB ALOAD,I   INIT AND LOAD MAIN PROG
0517  06526 114137        JSB AGEND,I   GENERATE ID SEGMENT
0518*     SCAN TO FIND PRIMARY DRIVER ENTRY POINT
0519  06527 015366        JSB INLST
0520  06530 015372  IOISN JSB LSTX
0521  06531 027614        JMP EQERR
0522  06532 161126        LDA LST1,I
0523  06533 051552        CPA IDEC       CHAR = I.  ?
0524  06534 002001        RSS
0525  06535 026530        JMP IOISN            NO, SO GO TO NEXT
0526  06536 161127        LDA LST2,I
0527  06537 051545        CPA TEMP       CHAR = XX  ?
0528  06540 002001        RSS
0529  06541 026530        JMP IOISN            NO, SO GO TO NEXT
0530  06542 161130        LDA LST3,I
0531  06543 010247        AND M7400
0532  06544 050340        CPA UBLNK      CHAR = BLANK  $
0533  06545 002001        RSS                  YES, SO I.XX VALUE
0534  06546 026530        JMP IOISN            NO, SO GO TO NEXT
0535  06547 161132        LDA LST5,I     GET BP LINK ADDRESS
0536  06550 040310        ADA M2000            ADJUST FOR BP ADDRESS
0537  06551 160000        LDA A,I        GET ABSOLUTE ENTRY POINT ADDRESS
0538  06552 071550        STA I.XX       STORE DRIVER PRIMARY ENTRY POINT
0539*
0540*       SCAN TO FIND CONTINUATION DRIVER ENTRY POINT
0541*
0542  06553 015366        JSB INLST
0543  06554 015372  IOCSN JSB LSTX
```

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0544  06555 027614          JMP EQERR
0545  06556 161126          LDA LST1,I
0546  06557 051553          CPA CDEC      CHAR = C,  ?
0547  06560 002001          RSS                 YES
0548  06561 026554          JMP IOCSN           NO, SO GO TO NEXT
0549  06562 161127          LDA LST2,I
0550  06563 051545          CPA TEMP      CHAR = XX  ?
0551  06564 002001          RSS                  YES
0552  06565 026554          JMP IOCSN           NO, SO GO TO NEXT
0553  06566 161130          LDA LST3,I
0554  06567 010247          AND M7400
0555  06570 050340          CPA UBLNK     CHAR = BLANK ?
0556  06571 002001          RSS                 YES, SO C.XX ENTRY
0557  06572 026554          JMP IOCSN           NO, SO GO TO NEXT
0558  06573 161132          LDA LST5,I    GET BP LINK ADDRESS
0559  06574 040310          ADA M2000     ADJUST FOR BP ADDRESS
0560  06575 160000          LDA A,I       GET ABS CONTINUATION ADDR
0561  06576 071551          STA C.XX      STORE DRIVER CONTINUATION POINT
0562  06577 067721  IOSSN    LDB XPPPP
0563  06600 061550          LDA I.XX
0564  06601 170001          STA B,I       STORE INIT ENTRY ADDR
0565  06602 006004          INB
0566  06603 061551          LDA C.XX
0567  06604 170001          STA B,I       STORE CONT ENTRY ADDRESS
0568  06605 044266          ADB P13
0569  06606 061052          LDA TPREL
0570  06607 170001          STA B,I        STORE UPPER MAIN MEMORY ADDRESS
0571  06610 006004          INB
0572  06611 061527          LDA TBREL
0573  06612 170001          STA B,I       STORE UPPER BASE MEMORY ADDRESS
0574  06613 006004          INB
0575  06614 061547          LDA TEMP+2
0576  06615 170001          STA B,I       STORE STARTING TRACK/SECTOR
0577  06616 003400          CCA
0578  06617 070512          STA LBCNT      SET EQT FOUND FLAG
0579  06620 067721          LDB XPPPP
0580  06621 044230          ADB P3
0581  06622 026500          JMP FNXTX      GO LOOK FOR ANOTHER EQT
0582  06623 063736  IOLOD    LDA EQCUR
0583  06624 064150          LDB TEMBF
0584  06625 114127          JSB ADOUT,I    OUTPUT REMAINING EQT SECTOR
0585  06626 061531          LDA PPREL     GET PROG RELOC ADDR
0586  06627 003004          CMA,INA
0587  06630 041052          ADA TPREL           ADD CURRENT PROG LENGTH
0588  06631 067763          LDB MAXPI     GET CURRENT LARGEST PROG LENGTH
0589  06632 007004          CMB,INB
0590  06633 044000          ADB A
0591  06634 006021          SSB,RSS
0592  06635 073763          STA MAXPI     SET NEW MAX PROG LENGTH
0593  06636 061530          LDA PBREL     GET BP RELOC ADDRESS
0594  06637 003004          CMA,INA
0595  06640 041527          ADA TBREL           ADD CURRENT BP LENGTH
0596  06641 067764          LDB MAXBI     GET CUR. LARGEST BP LENGTH
0597  06642 007004          CMB,INB
0598  06643 044000          ADB A
0599  06644 006021          SSB,RSS
```

```
0600  06645 073764         STA MAXBI     SET NEW MAX BP LENGHT
0601  06646 114136         JSB AREMD,I   OUTPUT REMAINDER OF ABS REC
0602  06647 061527         LDA TBREL
0603  06650 065530         LDB PBREL
0604  06651 114132         JSB ABPOT,I   OUTPUT BASE PAGE SECTION
0605  06652 061530         LDA PBREL
0606  06653 065527         LDB TBREL
0607  06654 114133         JSB ACLRT,I   CLEAR LOCAL BP LINKS
0608  06655 015441         JSB CLID3
0609  06656 026427         JMP IODLD     GO TO PROCESS NEXT PROG
0610  06657 114141  IODND JSB ANOTS,I   TEST FOR PROGS LOADED
0611*
0612*   WRITE OUT UPDATED EQT TABLE BACK ONTO DISC
0613*
0614  06660 014452         JSB SPACE
0615  06661 061530         LDA PBREL     GET BP RELOC ADDR
0616  06662 043764         ADA MAXBI          ADD MAX BP VALUE
0617  06663 071530         STA PBREL
0618  06664 061530  GETUL LDA PBREL      GET ADDRESS OF FIRST AVAILABLE
0619  06665 067622         LDB MES41       USER BASE PAGE LINK
0620  06666 015002         JSB CONVD
0621  06667 060272         LDA P20
0622  06670 067623         LDB MES42
0623  06671 114102         JSB DRKEY,I    OUTPUT=LWA SYS LINKSXXXX=
0624  06672 014452         JSB SPACE
0625  06673 060270         LDA P16
0626  06674 064155         LDB AMS36
0627  06675 114102         JSB DRKEY,I    OUTPUT = FWA USER LINKS?
0628  06676 061530         LDA PBREL      SET FOR BASE PAGE LIMIT
0629  06677 117621         JSB AINBD,I    INPUT & CONVERT NEW USER LINK
0630  06700 026664         JMP GETUL       ERROR - REPEAT
0631  06701 064302         LDB L2000      MAKE SURE VALUE IS
0632  06702 044000         ADB A            ON BASE PAGE
0633  06703 006021         SSB,RSS
0634  06704 026664         JMP GETUL        NO - ERROR, REPEAT
0635  06705 073731         STA SYBAD     SET NEW BP ADDRESS
0636  06706 071530         STA PBREL
0637  06707 071145         STA LBBP      SET LOW USER BP ADDRESS
0638  06710 014452         JSB SPACE
0639  06711 014452         JSB SPACE
0640  06712 061531         LDA PPREL     GET PROG RELOC ADDR
0641  06713 043763         ADA MAXPI          ADD MAX PROG VALUE
0642  06714 071531         STA PPREL
0643  06715 061531  GETUB LDA PPREL     GET ADDRESS OF FIRST AVAILABLE
0644  06716 065272         LDB MES35       USER PROGRAM ADDRESS
0645  06717 015002         JSB CONVD
0646  06720 060267         LDA P14
0647  06721 065271         LDB MES34
0648  06722 114102         JSB DRKEY,I   OUTPUT=LWA OF SYSTEM AREA XXXXX=
0649  06723 014452         JSB SPACE
0650  06724 060237         LDA P10       OUTPUT=FWA USER?=
0651  06725 065302         LDB MES38
0652  06726 114102         JSB DRKEY,I
0653  06727 061531         LDA PPREL      SET FOR MAIN PROGRAM LIMIT
0654  06730 117621         JSB AINBD,I    INPUT & CONVERT NEW USER BOUND
0001  06731 026715         JMP GETUB       ERROR - REPEAT
```

```
)002   06732 071531          STA PPREL
)003   06733 073723          STA SYMAD     SET NEW PROG ADDRESS
)004   06734 073724          STA BGBND
)005   06735 071054          STA COMAD
)006   06736 071532          STA RELAD
)007   06737 014452          JSB SPACE
)008*
```

```
0010*
0011*                LOAD USER MAIN PROG AND SEGMENTS
0012  06740 060230          LDA P3
0013  06741 071525          STA PTYPE     SET PROG TYPE TO USER MAIN
0014  06742 060272          LDA P20
0015  06743 064161          LDB MES20      MES20 = USER SYSTEM PROGRAMS
0016  06744 017625          JSB SETHD      PRINT HEADING INITIALIZE IDX
0017  06745 061531          LDA PPREL
0018  06746 070400          STA XPREL
0019  06747 002400          CLA
0020  06750 073737          STA ASFLG      CLEAR JOB PROCESSOR FLAG
0021  06751 114134  BDLD    JSB AIDSN,I    SCAN IDENTS
0022  06752 027135          JMP BDEND      END OF IDENTS
0023  06753 002041          SEZ,RSS        SKIP IF MAIN
0024  06754 026751          JMP BDLD       IGNORE SUBS
0025  06755 165121          LDB ID3,I      GET USAGE FLAG
0026  06756 006014          SLB,INB        SKIP = PROGRAM NOT LOADED
0027  06757 026751          JMP BDLD       IGNORE LOADED PROGRAM
0028  06760 175121          STB ID3,I      SET NEW USAGE FLAG
0029  06761 060400          LDA XPREL
0030  06762 141122          ADA ID4,I     COMMON LENGTH
0031  06763 071531          STA PPREL     SET NEW LOAD BASE ADDRESS
0032  06764 061117          LDA ID1        GET CURRENT MAIN IDENT ADDRESS
0033  06765 073733          STA IDMBS      SAVE MAIN IDENT ADDR FOR BS REF
0034  06766 161117          LDA ID1,I      CHECK IF PROGRAM IS JOB PROCESSO
0035  06767 053744          CPA ASJOB
0036  06770 002001          RSS                 =CHAR 1,2 IS 'JO'
0037  06771 027011          JMP BDLD5
0038  06772 161120          LDA ID2,I
0039  06773 053745          CPA ASJOB+1
0040  06774 002001          RSS                 =CHAR 3,4 IS 'BP'
0041  06775 027011          JMP BDLD5
0042  06776 161121          LDA ID3,I
0043  06777 010247          AND M7400
0044  07000 053746          CPA ASJOB+2
0045  07001 002001          RSS                 =CHAR 5 IS 'R'
0046  07002 027011          JMP BDLD5
0047  07003 037737          ISZ ASFLG      SET JOB PROCESSOR FLAG
0048  07004 061114          LDA DSKAD
0049  07005 073741          STA JOBPR      SET TRACK/SECTOR JOB PROCESSOR
0050  07006 061531          LDA PPREL
0051  07007 003004          CMA,INA
0052  07010 073742          STA JOBPR+1
0053  07011 114130  BDLD5   JSB ALOAD,I    INITIATE AND LOAD MAIN PROGRAM
0054  07012 114137          JSB AGEND,I   GENERATE ID SEGMENT
0055  07013 114136          JSB AREMD,I    OUTPUT REMAINDER OF RECORD
0056  07014 063737          LDA ASFLG      CHECK IF JOB PROCESSOR LOADING
0057  07015 002003          SZA,RSS             FLAG IS SET
0058  07016 027030          JMP BDLD8
0059  07017 061530          LDA PBREL      SET # OF WORDS OF BASE PAGE
0060  07020 003004          CMA,INA
0061  07021 041527          ADA TBREL
0062  07022 073743          STA JOBPR+2
0063  07023 061052          LDA TPREL     SET # WORDS OF MAIN
0064  07024 043742          ADA JOBPR+1
0065  07025 073742          STA JOBPR+1
```

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0066  07026 002400          CLA              CLEAR JOB PROCESSOR LOADING FLAG
0067  07027 073737          STA ASFLG
0068  07030 061114  BDLD8   LDA DSKAD        GET CURRENT DISC ADDRESS
0069  07031 073727          STA DSKBS        SAVE DISK ADDR OF BP SECTION
0070  07032 061527          LDA TBREL        GET UPPER BP ADDRESS
0071  07033 065530          LDB PBREL        GET LOWER BP ADDRESS
0072  07034 114132          JSB ABPOT,I      OUTPUT BP SECTION
0073  07035 061052          LDA TPREL        GET CURRENT PROG RELOC ADDR
0074  07036 071535          STA BSPAD        SAVE PROG RELOC ADDR FOR BS
0075  07037 061527          LDA TBREL        GET CURRENT BP RELOC ADDR
0076  07040 071534          STA BSBAD        SAVE Bp RELOC ADDR FOR BS
0077  07041 060232          LDA P5
0078  07042 071525          STA PTYPE      SET TYPE TO USER SEGMENT
0079  07043 061510          LDA CURAP       GET CURRENT PROGRAM LIST ADDR
0080  07044 002004          INA
0081  07045 071533          STA PLMAN        SAVE CURRENT PROGRAM LIST ADDR
0082  07046 015327          JSB INIDX        INITIALIZE IDX
0083  07047 015333  BSLD    JSB IDX          SET IDENT ADDRESSES
0084  07050 027113          JMP BSEND        END OF IDENTS
0085  07051 061117          LDA ID1          GET CURRENT MAIN IDENT ADDRESS
0086  07052 071537          STA IMAIN        SAVE MAIN BS IDENT ADDRESS
0087  07053 161124          LDA ID6,I        GET TYPE
0088  07054 002021          SSA,RSS          SKIP IF MAIN BG SEGMENT
0089  07055 027047          JMP BSLD         IGNORE SUBS
0090  07056 010245          AND M177         ISOLATE TYPE
0091  07057 050232          CPA P5           TYPE = BG SEGMENT?
0092  07060 002001          RSS              YES = CONTINUE
0093  07061 027047          JMP BSLD         NO = IGNORE IDENT
0094  07062 161125          LDA ID10,I       GET BS MAIN IDENT ADDRESS
0095  07063 053733          CPA IDMBS        BS CALLS THIS BG MAIN
0096  07064 002001          RSS              YES = CONTINUE
0097  07065 027047          JMP BSLD         NO = IGNORE BACKGROUND SEGMENT
0098  07066 061071          LDA TIDNT        GET NEXT IDENT ADDRESS
0099  07067 073732          STA ABSID        SAVE ADDR FOR NEXT BG SEG SCAN
0100  07070 007400          CCB
0101  07071 075540          STB HDFLG        SET HEADING FLAG FOR BG SEGMENT
0102  07072 114131          JSB ALODS,I      LOAD BG SEGMENT
0103  07073 014452          JSB SPACE        NEW LINE
0104  07074 114137          JSB AGEND,I      GENERATE ID SEGMENT, KEYWORD
0105  07075 114136          JSB AREMD,I      OUTPUT REMAINING OF ABS REC
0106  07076 061527          LDA TBREL        GET UPPER BP ADDRESS
0107  07077 065534          LDB BSBAD        GET LOWER BS BP ADDRESS
0108  07100 114132          JSB ABPOT,I      OUTPUT BP SECTION
0109  07101 061534          LDA BSBAD        GET BS BP RELOC ADDR
0110  07102 065527          LDB TBREL        GET UPPER BOUND BP ADDRESS
0111  07103 114133          JSB ACLRT,I      CLEAR BP LINKAGES
0112  07104 061534          LDA BSBAD        GET BS BP RELOC ADDRESS
0113  07105 071527          STA TBREL        SET BP RELOC ADDR
0114  07106 061535          LDA BSPAD        GET BS PROG RELOC ADDRESS
0115  07107 071052          STA TPREL        SET PROG RELOC ADDR
0116  07110 063732          LDA ABSID        GET NEXT BG SEG IDENT ADDR
0117  07111 071071          STA TIDNT        SET IDENT ADDRESS FOR IDX
0118  07112 027047          JMP BSLD         LOAD NEXT BG SEGMENT
0119*
0120  07113 061114  BSEND   LDA DSKAD        GET CURRENT DISK ADDRESS
0121  07114 073730          STA DSKBR        SAVE CURRENT DISK ADDR OF ABS
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0122  07115 063727          LDA DSKBS      GET DISK ADDR FOR MAIN BP CODE
0123  07116 071114          STA DSKAD      SET CURRENT BP CODE ADDRESS
0124  07117 061534          LDA BSBAD      GET UPPER ADDR OF BP CODE
0125  07120 065530          LDB PBREL      GET LOW ADDR FOR BP CODE
0126  07121 114132          JSB ABPOT,I    OUTPUT BP CODE FOR MAIN DISK RES
0127  07122 063730          LDA DSKBR      GET CURRENT DISK ADDRESS
0128  07123 071114          STA DSKAD      SET CURRENT ABS DISK ADDRESS
0129  07124 061530          LDA PBREL      GET LOW BP ADDRESS
0130  07125 065534          LDB BSBAD      GET UPPER BOUND BP CODE
0131  07126 114133          JSB ACLRT,I    CLEAR BP LINKAGES
0132  07127 060230          LDA P3
0133  07130 071525          STA PTYPE     SET PROG TYPE TO USER MAIN
0134  07131 015441          JSB CLID3      CLEAR PROG LOADED FLAGS
0135  07132 061061          LDA PLAD
0136  07133 071510          STA CURAP
0137  07134 026751          JMP BDLD      LOAD NEXT USER MAIN
0138*
0139  07135 114141  BDEND JSB ANOTS,I    TEST FOR PROGRAMS LOADED
0140  07136 014452          JSB SPACE      NEW LINE
0141*     STORE EX MODULE DOUBLETS ON DISC
0142  07137 061114          LDA DSKAD
0143  07140 050476          CPA LOLIB      OVERRUNNING LIBRY IN SCRATCH?
0144  07141 024474          JMP LIBER       =YES, CRASH!
0145  07142 073720          STA DSKEX      SAVE ADDRESS FOR LOADER
0146  07143 064211          LDB EXDEF
0147  07144 114127          JSB ADOUT,I    OUTPUT DOUBLETS TO DISC
0148  07145 061114          LDA DSKAD
0149  07146 014513          JSB DISKA      INCR DISC ADDRESS
0150  07147 071114          STA DSKAD
```

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0152*
0153*                                          MOVE UTILITY PROGS TO LOW DISK
0154  07150 002400          CLA
0155  07151 073722          STA LBSEC         CLEAR LIBRARY SECTOR COUNT
0156  07152 073740          STA UTCNT
0157  07153 061114          LDA DSKAD         GET CURRENT DISK ADDRESS
0158  07154 073726          STA DSKUT         SAVE DISK ADDR OF UTILITY PROGS
0159  07155 015327          JSB INIDX         INITIALIZE IDENT SCAN
0160  07156 015333  GETLB    JSB IDX          SET IDENT ADDRESSES
0161  07157 027215          JMP ENDSY         ALL UTILITY PROGS MOVED
0162  07160 161124          LDA ID6,I         GET TYPE
0163  07161 010245          AND M177          ISOLATE TYPE
0164  07162 050233          CPA P6          TYPE = LIBRARY
0165  07163 027167          JMP STLBR
0166  07164 050234          CPA P7
0167  07165 002001          RSS
0168  07166 027156          JMP GETLB         IGNORE OTHER PROGRAMS
0169  07167 161125  STLBR   LDA ID10,I
0170  07170 064000          LDB A             ADD LENGTH OF CURRENT LIBRARY
0171  07171 047722          ADB LBSEC              PROGRAM TO TOTAL SECTOR
0172  07172 077722          STB LBSEC              COUNT
0173  07173 003004          CMA,INA
0174  07174 071116          STA DSCNT         SET SECTOR COUNT
0175  07175 161123          LDA ID5,I         GET INITIAL DISK ADDR
0176  07176 071542  MOVEL    STA DSKRD        SET CURRENT UTILITY DISK ADDRESS
0177  07177 065056          LDB ADBUF         GET ADDRESS OF DBUF
0178  07200 014534          JSB DISKI         READ UTILITY PROGRAM RECORD
0179  07201 061114          LDA DSKAD         GET CURRENT ABSOLUTE DISK ADDR
0180  07202 065056          LDB ADBUF         GET ADDRESS OF DBUF
0181  07203 114127          JSB ADOUT,I       WRITE UTILITY RECORD ON DISK
0182  07204 061114          LDA DSKAD         GET CURRENT ABSOLUTE DISK ADDR
0183  07205 014513          JSB DISKA         INCR DISC ADDRESS
0184  07206 071114          STA DSKAD         SET NEW CURRENT DISK ADDRESS
0185  07207 061542          LDA DSKRD         GET CURRENT UTILITY DISK ADDR
0186  07210 014513          JSB DISKA         INCR DISC ADDRESS
0187  07211 035116          ISZ DSCNT         SKIP = UTILITY PROGRAM MOVED
0188  07212 027176          JMP MOVEL         MOVE NEXT UTILITY PROGRAM
0189  07213 037740          ISZ UTCNT
0190  07214 027156          JMP GETLB         SCAN IDENTS FOR NEXT UTILITY PRG
0191*
0192*      FORM LIBRARY ID SEGMENT
0193*
0194  07215 063747  ENDSY    LDA LIBAS        OUTPUT ASCII CHARS =LI=
0195  07216 114140          JSB AOUTD,I
0196  07217 063750          LDA LIBAS+1       OUTPUT ASCII CHARS =BR=
0197  07220 114140          JSB AOUTD,I
0198  07221 063751          LDA LIBAS+2       OUTPUT ASCII CHAR =Y= AND TYPE 6
0199  07222 114140          JSB AOUTD,I
0200  07223 063726          LDA DSKUT         OUTPUT LIBRARY TRACK/SECTOR ADDR
0201  07224 114140          JSB AOUTD,I
0202  07225 063722          LDA LBSEC         OUTPUT # SECTORS IN LIBRARY
0203  07226 114140          JSB AOUTD,I
0204  07227 060217          LDA N6
0205  07230 071064          STA WDCNT
0206  07231 002400          CLA
0207  07232 114140          JSB AOUTD,I       OUTPUT ZEROS TO REST OF ID SEGMT
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0208  07233 035064          ISZ WDCNT
0209  07234 027231          JMP *-3
0210  07235 061524          LDA DSKID      OUTPUT FINAL ID SEGMENT BUFFER
0211  07236 065057          LDB AIBUF      GET ADDR OF ID SEG BUFFER
0212  07237 114127          JSB ADOUT,I    OUTPUT LAST ID SEGMENT SECTOR
0213*
0214*
0215*     FORM TRACK ASSIGNMENT TABLE
0216*
0217  07240 061114          LDA DSKAD      CURRENT DISC ADDRESS
0218*     ****************************************************************
0219  07241 010247          AND M7400      PICK UP UPPER 8 BITS
0220  07242 001727          ALF,ALF        RIGHT JUSTIFY
0221  07243 071545          STA TEMP
0222*     ****************************************************************
0223  07244 061145          LDA LBBP
0224  07245 040224          ADA N1
0225  07246 073760          STA BPAGE
0226*     ****************************************************************
0227  07247 040245          ADA M177
0228  07250 010317          AND M7600      PICK UP HIGH 11 BITS
0229  07251 001727          ALF,ALF        RIGHT JUSTIFY
0230  07252 001200          RAL
0231  07253 002004          INA
0232  07254 070001          STA B
0233*     ****************************************************************
0234  07255 061114          LDA DSKAD
0235  07256 010245          AND M177
0236  07257 040001          ADA B
0237  07260 003004          CMA,INA
0238  07261 040404          ADA NSPTK
0239  07262 002002          SZA
0240  07263 002020          SSA
0241  07264 035545          ISZ TEMP
0242  07265 035545          ISZ TEMP
0243  07266 061545          LDA TEMP
0244  07267 073761          STA SYSBT
0245*
0246*                                  CLEAR SYSTEM COMMUNICATION AREA
0247  07270 060202          LDA DEF,
0248  07271 064310          LDB M2000    GET ADDR OF END OF SYS COMM AREA
0249  07272 007004          CMB,INB
0250  07273 044000          ADB A          SET B = COMM AREA LENGTH
0251  07274 075064          STB WDCNT      SET COUNT FOR CLEARING BP AREA
0252  07275 006400          CLB
0253  07276 174000          STB A,I        CLEAR BP COMM AREA WORD
0254  07277 002004          INA
0255  07300 035064          ISZ WDCNT      SKIP = AREA CLEARED
0256  07301 027276          JMP *-3        CONTINUE CLEARING BP AREA
0257*
0258*                                  PUT OUT SYS COMM AREA VALUES
0259  07302 065056          LDB ADBUF
0260  07303 075135          STB CURAD
0261  07304 014441          JSB BUFCL      CLEAR DBUF
0262  07305 060257          LDA N128
0263  07306 071136          STA DCNT
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0264*
0265  07307 002400          CLA
0266  07310 071532          STA RELAD      CLEAR RELOCATION ADDR FOR LABDO
0267  07311 071536          STA TBSYG      TBSYG = EJOBF IN DOS-M
0268*
0269  07312 060411          LDA AEQT       GET ADDRESS OF EQT
0270  07313 071367          STA EQTAB      SET ADDRESS OF EQT TABLE
0271*
0272  07314 060412          LDA CEQT       GET NO. OF EQT ENTRIES
0273  07315 071370          STA EQT#       SET NO. OF EQT ENTRIES
0274*
0275  07316 060413          LDA ASQT       GET ADDR OF DEV REF TABLE
0276  07317 071371          STA LUTAB      SET ADDRESS OF DEVICE REFERENCE
0277*
0278  07320 060414          LDA CSQT       GET NO. OF DEV REF TABLE ENTRIES
0279  07321 071372          STA LUT#       SET # DEVICE REF ENTRIES
0280*
0281  07322 060415          LDA AINT       GET ADDR OF INTERRUPT TABLE
0282  07323 071451          STA INTAB      SET ADDRESS OF INTERRUPT TABLE
0283*
0284  07324 060416          LDA CINT       GET NO. OF INT ENTRIES
0285  07325 071452          STA INT#       SET # OF INTERRUPT ENTRIES
0286*
0287  07326 061105          LDA COMPT
0288  07327 071435          STA CUMID      SET COMPUTER IDENTIFICATION FLAG
0289*
0290  07330 061102          LDA TBCHN      GET I/O ADDR FOR TBG
0291  07331 071353          STA TBG        SET I/O ADDR FOR TBG
0292*
0293  07332 061112          LDA PICHN      GET I/O ADDR FOR PRIV INT CARD
0294  07333 071540          STA DUMMY      SET IT
0295*
0296  07334 060410          LDA SSSAV      SYSTEM SEARCH FLAG
0297  07335 071601          STA SSFLG
0298  07336 002404          CLA,INA
0299  07337 071362          STA SYSTY      SET I/O ADDR FOR SYS TELETYPE
0300  07340 071361          STA BATCH
0301*
0302  07341 063714          LDA UBMAN    GET USER SYSTEM PROGRAM ORIGIN
0303  07342 071524          STA UMFWA
0304*
0305  07343 061103          LDA LWASM      GET LAST AVAIL ADDR FOR SYSTEM
0306  07344 071350          STA UMLWA      SET LAST AVAIL ADDR
0307  07345 002004          INA
0308  07346 071373          STA JBUF       STORE JOB BUFFER ADDRESS
0309*
0310  07347 060371          LDA DSKAB
0311  07350 071364          STA SYSDR      SET SYS DIRECTORY TRACK/SECTOR
0312  07351 071444          STA TSONE
0313*
0314  07352 063761          LDA SYSBT
0315  07353 001727          ALF,ALF
0316  07354 040305          ADA M400
0317  07355 071365          STA SYSBF      SET SYS BUF SECTOR/USER DIRECTOR
0318  07356 040305          ADA M400
0319  07357 071430          STA SYNTS      SYSTEM NEXT TRACK/SECTOR
```

```
0320*
0321   07360 060405          LDA NSPCY
0322   07361 071366          STA $SECT      # SECTORS/CYLINDER
0323   07362 003004          CMA,INA
0324   07363 071563          STA MSECT      NEG #SCTRS/CYL
0325*
0326   07364 061076          LDA SCODE
0327   07365 071446          STA SYSCD      SYS GEN CODE
0328   07366 061101          LDA UDSC
0329   07367 071431          STA CUDSC      CURR USER DISC SUBCHNL
0330   07370 071445          STA GUDSC      DFLT USER DISC SUBCHNL
0331   07371 061106          LDA SYSCH
0332   07372 071425          STA SYSSC      SYS SUBCHNL
0333   07373 071576          STA LSTCH      LAST SUBCHANNEL REFERENCED
0334   07374 006400          CLB
0335   07375 075432          STB CRFLG      CURRENT REQUEST FLAG
0336   07376 051431          CPA CUDSC      SYS SC = USER SC?
0337   07377 065365          LDB SYSBF       -YES
0338   07400 075450          STB DISCL      USER SC FLAG
0339   07401 064305          LDB M400
0340   07402 051431          CPA CUDSC      SYS SC = USER SC?
0341   07403 065430          LDB SYNTS       -YES
0342   07404 075427          STB UDNTS      SET USER NEXT TRACK/SECTOR
0343   07405 061107          LDA SCNO
0344   07406 071426          STA SCCNT      # SUBCHNLS
0345   07407 060246          LDA M377
0346   07410 071433          STA CUDLA      USER LAST TRACK ACCESSED
0347   07411 071434          STA SDLA       SYST LAST TRACK ACCESSED
0348*
0349   07412 063753          LDA EXMLC
0350   07413 071513          STA EXLOC      SET LOCATION OF EX MOD DOUBLETS
0351   07414 063752          LDA EXCN#
0352   07415 071514          STA EX#        SET # OF EX MOD DOUBLETS
0353   07416 063756          LDA EXBS1
0354   07417 071520          STA EXBAS      SET EXMOD -LOW- BASE ADDR
0355   07420 063757          LDA EXBS2
0356   07421 071521          STA EXBAS+1    SET EX MOD -HI- BASE ADDR
0357   07422 063754          LDA EXMN1
0358   07423 071516          STA EXMAN      SET EX MOD -LOW- MAIN ADDR
0359   07424 063755          LDA EXMN2
0360   07425 071517          STA EXMAN+1    SET EX MOD -HI- MAIN ADDR
0361*
0362   07426 063734          LDA IOMBS
0363   07427 071523          STA IODBS      SET FWA OF I/O DRIVER BASE AREA
0364   07430 063735          LDA IOMMS
0365   07431 071522          STA IODMN      SET FWA OF I/O DRIVER MAIN AREA
0366*
0367   07432 063741          LDA JOBPR      SET JOB PROCESSOR PARAMETERS
0368   07433 071533          STA JOBPM           T/S
0369   07434 063742          LDA JOBPR+1
0370   07435 071534          STA JOBPM+1         # WORDS OF MAIN
0371   07436 063743          LDA JOBPR+2
0372   07437 071535          STA JOBPM+2         # WORDS OF BASE
0373*
0374   07440 063726          LDA DSKUT
0375   07441 071574          STA DSCLB      SET ADDR OF RELOCATABLE LIBRARY
```

```
0376  07442 063740        LDA UTCNT
0377  07443 071575        STA DSCL#     SET # OF LIBRARY PROGRAMS
0378*
0379  07444 007400        CCB           FORM DISC CHAN/TRACK # TABLES
0380  07445 045077        ADB DSIZE
0381  07446 003400        CCA
0382  07447 041100        ADA DCHNL
0383  07450 001727        ALF,ALF
0384  07451 001723        ALF,RAR
0385  07452 030001        IOR B
0386  07453 071424        STA DISCO     SYSTEM DISC SET
0387*
0388  07454 063724        LDA BGBND
0389  07455 071524        STA UMFWA     SET 1ST WORD ADDR OF USER MAIN
0390  07456 061145        LDA LBBP
0391  07457 071525        STA UBFWA     SET 1ST WORD ADDR OF USER BASE
0392  07460 060377        LDA UPLNK
0393  07461 071526        STA UBLWA     SET LAST WORD ADDR OF USER BASE
0394*
0395  07462 060201        LDA DFN64
0396  07463 071321        STA CURAT
0397  07464 060261        LDA N32
0398  07465 071322        STA TCNT
0399  07466 064314        LDB M2040
0400  07467 161321        LDA CURAT,I
0401  07470 170001        STA B,I
0402  07471 006004        INB
0403  07472 035321        ISZ CURAT
0404  07473 035322        ISZ TCNT
0405  07474 027467        JMP *-5
0406  07475 061114        LDA DSKAD
0407  07476 073707        STA DSKBP     DISC ADDR OF BASE PAGE
0408  07477 060202        LDA DEF,
0409  07500 071321        STA CURAT     SET CURRENT SYS BP ADDRESS
0410  07501 064252        LDB N280
0411  07502 075322        STB TCNT
0412*
0413*                                   PUT OUT BASE PAGE
0414*
0415  07503 064315        LDB M2100
0416  07504 161321        LDA CURAT,I   GET WORD OF SYS COMM AREA
0417  07505 170001        STA B,I       MOVE WORD TO BP LOCATION
0418  07506 006004        INB           INCR CURRENT BP LOCATION WORD
0419  07507 035321        ISZ CURAT     INCR CURRENT BP ADDRESS
0420  07510 035322        ISZ TCNT      SKIP = SYS COMM AREA MOVED
0421  07511 027504        JMP *-6       CONTINUE MOVING BASE PAGE
0422  07512 063760        LDA BPAGE
0423  07513 064227        LDB P2        GET LOWER SYSTEM BP ADDRESS
0424  07514 114132        JSB ABPOT,I   OUTPUT RESIDENT BP SECTION
0425*
0426*                                   SET BOOTSTRAP LOADER BUFFER
0427  07515 061114        LDA DSKAD
0428  07516 073725        STA DSKAV
0429  07517 002504        CLA,CLE,INA   SET UP TO READ SECTORS 1,2
0430  07520 017643        JSB TMPID     GET BOOTSTRAP FROM DISC
0431  07521 060264        LDA N12
```

```
0432  07522 071064          STA WDCNT      SET BUFFER LENGTH * 6
0433  07523 064145          LDB ABOOT      GET ADDR OF BOOTSTRAP LOADER
0434  07524 007004          CMB,INB
0435  07525 044147          ADB ASBUF      ADD ADDRESS OF BOOTSTRAP BUFFER
0436  07526 006004          INB            SET B = BOOTSTRAP DISPLACEMENT
0437  07527 044150          ADB TEMBF      GET ADDRESS OF BOOTSTRAP BUFFER
0438  07530 075322          STB TCNT
0439  07531 067700          LDB ASECT      GET ADDRESS OF BOOTSTRAP VALUES
0440  07532 160001          LDA B,I        GET WORD FOR BOOTSTRAP BUFFER
0441  07533 171322          STA TCNT,I
0442  07534 006004          INB            INCR CURRENT ASECT ADDRESS
0443  07535 035322          ISZ TCNT
0444  07536 035064          ISZ WDCNT      SKIP = BOOTSTRAP BUFFER SET
0445  07537 027532          JMP *-5        CONTINUE SETTING VALUES IN BOOT
0446  07540 002704          CLA,CCE,INA    SET UP TO WRITE SECTORS 1,2
0447  07541 017643          JSB TMPIO      WRITE BOOTSTRAP BACK TO DISC
0448*
0449*     ****************************************************************
0450*
0451  07542 002400          CLA
0452  07543 065056          LDB ADBUF
0453  07544 014534          JSB DISKI      READ SYS LABEL SECTOR
0454  07545 061365          LDA SYSBF
0455  07546 171141          STA SNXTS,I    SET NXTTS
0456  07547 002400          CLA
0457  07550 065056          LDB ADBUF
0458  07551 114127          JSB ADOUT,I    WRITE SYST. LABEL SECTOR
0459  07552 060404          LDA NSPTK
0460  07553 050274          CPA P23        ISS DISC?
0461  07554 006401          CLB,RSS         =YES
0462  07555 027563          JMP IOM         =NO
0463  07556 063761          LDA SYSBT      GET ADDRS OF SYS BFR TRK
0464  07557 040224          ADA N1         DECREMENT 1 TRACK
0465  07560 070363          STA LODSK
0466  07561 060300          LDA P202
0467  07562 114167          JSB APTCT,I    UNPROTECT USER AREA
0468  07563 060341  IOM     LDA UPAST      *
0469  07564 171137          STA ADLBL,I    * SET UP
0470  07565 061320          LDA ASCSB      *
0471  07566 171142          STA SBLBL,I    *  SYSTEM
0472  07567 002400          CLA            *
0473  07570 171056          STA ADBUF,I    *  BUFFER
0474  07571 065056          LDB ADBUF      *
0475  07572 014501          JSB CHKSM      *  SECTOR
0476  07573 171140          STA ADCHK,I    *
0477  07574 061430          LDA SYNTS
0478  07575 171141          STA SNXTS,I
0479  07576 060345          LDA INWRT
0480  07577 070347          STA DWRT       SET TO WRITE UNPROTECTED
0481  07600 060256          LDA N129
0482  07601 070257          STA N128       SET TO CLEAR USER DRCTRY
0483  07602 061365          LDA SYSBF
0484  07603 065056          LDB ADBUF
0485  07604 114127          JSB ADOUT,I    WRITE SYSTEM BFR SECTOR
0486*
0487  07605 060273          LDA P22
```

```
0488  07606 064162         LDB MES23
0489  07607 114102         JSB DRKEY,I    PRINT: SYSTEM STORED ON DISK
0490  07610 063725         LDA DSKAV      GET NEXT AVAILABLE DISK ADDR
0491  07611 065113         LDB DERCN      GET DISK ERROR COUNT
0492  07612 102077         HLT 77B
0493  07613 027612         JMP *-1        END OF JOB
0494  07614 063617  EQERR LDA ERR23
0495  07615 014456         JSB ERROR
0496  07616 102000         HLT
0497  07617 031063  ERR23 ASC 1,23
0498  07620 177710  L70    OCT -70        MAX 28 EXEC MODULES
0499  07621 005163  AINBD DEF INBND
0500  07622 005217  MES41 DEF SYLM+7
0501  07623 005210  MES42 DEF SYLM
0502  07624 001443  MAGIC DEC 803         MAX # LINKS
0503*
0504*                                     (TURN ON DISK PROTECT)
0505*
0506*****************************************************************
0507*                          E N D   D S G E N                    *
0508*****************************************************************
```

```
0510*
0511*                                          PRINT HEADING, INITIALIZE IDX
0512*
0513*  THE SETHD SUBROUTINE PRINTS THE HEADINGS FOR THE DIFFERENT
0514*  TYPES OF PROGRAMS LOADED, SETS THE NO-PROGRAMS-LOADED-YET
0515*  FLAG, AND ORIGINS THE SCAN OF IDENT.
0516*
0517*  CALLING SEQUENCE:
0518*    A = NO. CHARS. (POS.) IN MESSAGE
0519*    B = ADDRESS OF MESSAGE
0520*    JSB SETHD
0521*
0522*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0523*
0524  07625 000000  SETHD NOP
0525  07626 114102        JSB DRKEY,I    PRINT HEADING
0526  07627 014452        JSB SPACE      NEW LINE
0527  07630 003400        CCA
0528  07631 071536        STA LFLAG      SET PROGRAMS-LOADED FLAG = -1
0529  07632 061070        LDA BIDNT      GET FIRST IDENT ADDRESS
0530  07633 071541        STA CIDNT      SET IDENT ADDRESS FOR ID SCAN
0531  07634 127625        JMP SETHD,I    RETURN
0532*
0533*                                          UPDATE RESIDENT MEMORY BOUNDS
0534*
0535*  THE INCAD SUBROUTINE UPDATES THE MAIN AND BP MEMORY BOUNDS
0536*  FROM THAT USED IN THE PREVIOUS LOADING CALL.
0537*
0538*  CALLING SEQUENCE:
0539*    A = IGNORED
0540*    B = IGNORED
0541*    JSB INCAD
0542*
0543*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0544*
0545  07635 000000  INCAD NOP
0546  07636 061052        LDA TPREL      GET CURRENT RELOCATION ADDRESS
0547  07637 071531        STA PPREL      SET NEW PROGRAM RELOC ADDRESS
0548  07640 061527        LDA TBREL      GET CURRENT BP RELOC ADDRESS
0549  07641 071530        STA PBREL      SET NEW BP RELOCATION ADDRESS
0550  07642 127635        JMP INCAD,I    RETURN
0551*
0552  07643 000000  TMPIO NOP
0553  07644 064253        LDB N256
0554  07645 074257        STB N128
0555  07646 064150        LDB TEMBF
0556  07647 002040        SEZ            IS THIS A READ REQUEST?
0557  07650 027653        JMP *+3         -NO
0558  07651 014534        JSB DISKI       -YES
0559  07652 002001        RSS
0560  07653 114127        JSB ADOUT,I
0561  07654 060303        LDA .N128
0562  07655 070257        STA N128
0563  07656 127643        JMP TMPIO,I
0564*
```

```
0566*
0567*                                          SCAN BP AREA FOR SAME OPERAND
0568*
0569*  THE SCNBP SUBROUTINES CONTROLS THE SCAN FOR A GIVEN OPERAND
0570*  IN THE CURRENT BP SECTION.
0571*
0572*  CALLING SEQUENCE:
0573*    A = LOWER BP ADDRESS
0574*    B = UPPER BP ADDRESS
0575*    JSB SCNBP
0576*
0577*  RETURN:
0578*    (1): TO BPSCN - OPERAND NOT FOUND
0579*    (2): TO MAIN PROGRAM - OPERAND FOUND (A = BP ADDR OF OPERAND)
0580*
0581  07657 000000  SCNBP NOP
0582  07660 007004        CMB,INB       SET LOW BOUND TO NEGATIVE
0583  07661 075170        STB UPPER     SAVE NEGATIVE UPPER BOUND
0584  07662 071167        STA LOWER     SAVE LOWER BOUND
0585  07663 061167  BPSRC LDA LOWER     GET CURRENT LOW BP BOUND
0586  07664 041170        ADA UPPER     TEST FOR END OF AREA
0587  07665 002021        SSA,RSS       SKIP - AREA NOT EXHAUSTED
0588  07666 127657        JMP SCNBP,I   RETURN - SAME OPERAND NOT FOUND
0589  07667 065165        LDB OPRND     GET OPERAND
0590  07670 061167        LDA LOWER     SET A = LOWER BOUND
0591  07671 040310        ADA M2000     ADJUST FOR FIRST PAGE ADDRESS
0592  07672 035167        ISZ LOWER     INCR LOWER BOUND
0593  07673 154000        CPB A,I       OPERANDS EQUAL?
0594  07674 002001        RSS           YES - GET BP ADDRESS
0595  07675 027663        JMP BPSRC     NO - CONTINUE BP SCAN
0596  07676 040302        ADA L2000     ADJUST FOR BP ADDRESS
0597  07677 124144        JMP ASCOT,I   RETURN - A = BP LINK ADDR FOR OP
0598*
```

```
0600*
0601   07700 007705   ASECT DEF SECTR
0602   07701 124003   JMP3I JMP 3,I          INITIAL JMP INSTRUCTION
0603   07702 052000   UCHRT OCT 52000        UPPER ASCII CHAR T
0604*
0605   07703 022123   CHR$S ASC 1,$S
0606   07704 052122   CHRTR ASC 1,TR
0607*
```

```
0609*
0610*
0611  07705           SECTR BSS 0          BOOTSTRAP BUFFER FORMAT
0612*
0613  07705 000002    LBPSY DEC 2          LOWER SYS BP ADDRESS
0614  07706 000000    UBPSY BSS 1          UPPER SYS BP ADDRESS
0615  07707 000000    DSKBP BSS 1           SYS BP DISK ADDRESS
0616*
0617  07710 000000    LRMAN BSS 1          LOWER SYS MAIN ADDRESS
0618  07711 000000    URMAN BSS 1          UPPER SYS MAIN ADDRESS
0619  07712 000000    DSKRR BSS 1          SYS MAIN DISC ADDRESS
0620*
0621*
0622  07713 000000    LBMAN BSS 1          LOWER I/O TABLES ADDRESS
0623  07714 000000    UBMAN BSS 1          UPPER I/O TABLES ADDRESS
0624  07715 000000    DSKBG BSS 1          I/O TABLES DISC ADDRESS
0625*
0626  07716 000000    DSKEL BSS 1           LOWER EXEC MODULE DOUBLET ADDR
0627  07717 000000    DSKEU BSS 1           UPPER EXEC MODULE DOUBLET ADDR
0628  07720 000000    DSKEX BSS 1           EXEC MODULE DOUBLET DISC ADDR
0629*
0630  07721 000000    XPPPP BSS 1          CURRENT EQT FORMATION ADDRESS
0631  07722 000000    LBSEC NOP             LIBRARY SECTOR COUNTER
0632  07723 000000    SYMAD BSS 1           AVAIL SYS MEM ADDR
0633  07724 000000    BGBND BSS 1           BACKGROUND BOUNDARY
0634*
0635  07725 000000    DSKAV BSS 1           NEXT AVAILABLE DISK ADDRESS
0636  07726 000000    DSKUT BSS 1           UTILITY PROG DISK ADDRESS
0637  07727 000000    DSKBS BSS 1           DISK ADDR OF MAIN BG DISK RES BP
0638  07730 000000    DSKBR BSS 1           CURRENT MAIN BG DISK RES DISK AD
0639  07731 000000    SYBAD BSS 1           ADDR OF FIRST BP LINK FOR BG
0640  07732 000000    ABSID BSS 1           IDENT ADDR FOR NEXT BG SEG SCAN
0641  07733 000000    IDMBS BSS 1           BG MAIN ADDRESS FOR BS REF
0642  07734 000000    IOMBS NOP             I/O DRIVER MODULE BASE
0643  07735 000000    IOMMS NOP             I/O DRIVER MODULE MAIN
0644  07736 000000    EQCUR NOP             CURRENT EQT SECTOR ADDRESS
0645  07737 000000    ASFLG NOP
0646  07740 000000    UTCNT NOP            # OF LIBRARY PROGRAMS
0647  07741 000000    JOBPR BSS 3           JOB PROCESSOR(T/S)# MAIN)# BASE)
0648  07744 045117    ASJOB ASC 2,JOBP
0649  07746 051000          OCT 51000
0650  07747 046111    LIBAS ASC 2,LIBR      ASC LIBRY AND TYPE 6 FOR LIBRARY
0651  07751 054406          OCT 54406            ID SEGMENT
0652  07752 000000    EXCN# NOP             # OF EX MODULES
0653  07753 000000    EXMLC NOP             ADDRESS OF EX MOD PARAM
0654*
0655  07754 000000    EXMN1 NOP             EX MOD MAIN -LOW- ADDRESS
0656  07755 000000    EXMN2 NOP             EX MOD MAIN -HI- ADDRRSS
0657  07756 000000    EXBS1 NOP             EX MOD BASE -LOW- ADDRESS
0658  07757 000000    EXBS2 NOP             EX MOD BASE -HI- ADDRESS
0659  07760 000000    BPAGE NOP
0660  07761 000000    SYSBT NOP
0661  07762 000000    MAXBX NOP            MAX EX MODULE BASE PAGE LENGTH
0662  07763 000000    MAXPI NOP            MAX I/O DRIVER PROG LENGTH
0663  07764 000000    MAXBI NOP            MAX I/O DRIVER BP LENGTH
0664*
```

```
0665  07765                ORG *
```

```
0667  10000                 ORG 10000B
0001*
0002*                                       SCAN IDENTS FOR PROGRAM TYPE
0003*
0004*  THE IDSCN SUBROUTINE SCANS IDENT FOR A PROGRAM OF THE
0005*  CURRENT TYPE (SET IN PTYPE).
0006*
0007*  CALLING SEQUENCE:
0008*    A = IGNORED
0009*    B = IGNORED
0010*    JSB IDSCN
0011*  RETURN
0012*     (N+1) = END OF IDENTS RETURN
0013*     (N+2) = PROG FOUND RETURN
0014*
0015*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0016*    E = M/S FLAG FOR CURRENT PROGRAM.
0017*
0018  10000 000000  IDSCN NOP
0019  10001 061541        LDA CIDNT     GET NEXT IDENT IN SCAN
0020  10002 071071        STA TIDNT     SET IDENT ADDRESS FOR IDX
0021  10003 015333        JSB IDX       SET IDENT ADDRESSES
0022  10004 126000        JMP IDSCN,I   RETURN = END OF IDENTS
0023  10005 061117        LDA ID1       GET CURRENT MAIN IDENT ADDRESS
0024  10006 071537        STA IMAIN     SAVE CURRENT MAIN IDENT ADDRESS
0025  10007 061071        LDA TIDNT     GET NEXT IDENT ADDRESS
0026  10010 071541        STA CIDNT     SAVE ADDR FOR NEXT IDENT SCAN
0027  10011 161124        LDA ID6,I     GET TYPE
0028  10012 001265        RAL,CLE,ERA   SET E = M/S
0029  10013 010245        AND M177      ISOLATE PROGRAM TYPE
0030  10014 051525        CPA PTYPE     CURRENT TYPE?
0031  10015 002001        RSS           YES = CONTINUE
0032  10016 026003        JMP IDSCN+3   IGNORE IDENT - TRY NEXT IDENT
0033  10017 036000        ISZ IDSCN     INCR RETURN ADDRESS
0034  10020 126000        JMP IDSCN,I   RETURN
0035*
0036*                                       TEST FOR SOME PROGRAMS LOADED
0037*
0038*  THE NOTST SUBROUTINE CHECKS FOR PROGRAMS OF THE CURRENT
0039*  TYPE LOADED.  IT IS EXECUTED FOLLOWING COMPLETION OF THE
0040*  LOADING SEQUENCE FOR EACH PROGRAM TYPE.  IF NO PROGRAMS OF
0041*  THIS TYPE HAVE BEEN LOADED, IT PRINTS THE MESSAGE
0042*  (NONE) ON THE TELEPRINTER.
0043*
0044*  CALLING SEQUENCE:
0045*    A = IGNORED
0046*    B = IGNORED
0047*    JSB NOTST
0048*
0049*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0050*
0051  10021 000000  NOTST NOP
0052  10022 035536        ISZ LFLAG     SKIP = NO PROGRAMS LOADED
0053  10023 126021        JMP NOTST,I   RETURN
0054  10024 060233        LDA P6
0055  10025 065265        LDB MES22     MES22 = ADDR: (NONE)
```

```
0056  10026 114102          JSB DRKEY,I    PRINT: (NONE)
0057  10027 126021          JMP NOTST,I    RETURN
0058*
0059*                                       CLEAR LOCAL LST ENTRIES
0060*
0061*  CLRLT CLEARS THE CURRENT BP LINKAGE ADDRESSES IN THE LOADER
0062*  SYMBOL TABLE TO MAKE THEM UNAVAILABLE TO THE SUCCEEDING
0063*  PROGRAMS.  THIS CONSISTS OF CLEARING WORD 5 OF THE LST
0064*  ENTRY, AND THE CORRESPONDING BP LINK VALUE IN BASE PAGE.
0065*    A = CURRENT LOW BP ADDRESS
0066*  CALLING SEQUENCE:
0067*    B = CURRENT HIGH BP ADDRESS
0068*    JSB CLRLT
0069*
0070*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0071*
0072*
0073  10030 000000  CLRLT NOP
0074  10031 003004        CMA,INA        SET NEGATIVE
0075  10032 071167        STA LOWER      SAVE LOWER BOUND
0076  10033 007004        CMB,INB        SET NEGATIVE
0077  10034 075170        STB UPPER      SAVE UPPER BOUND
0078  10035 015366        JSB INLST      INITIALIZE LSTX
0079  10036 015372  CLRNX JSB LSTX       SET LST ADDRESSES
0080  10037 026054        JMP CLBPS      CLEAR BP SECTION
0081  10040 161132        LDA LST5,I     GET WORD 5 OF LST ENTRY
0082  10041 041167        ADA LOWER      ADD NEG LOWER BOUND
0083  10042 002020        SSA            SKIP IF GREATER, EQUAL TO LOWER
0084  10043 026036        JMP CLRNX      TRY NEXT ENTRY
0085  10044 161132        LDA LST5,I     GET WORD 5 OF LST ENTRY
0086  10045 041170        ADA UPPER      ADD NEG UPPER BOUND
0087  10046 002021        SSA,RSS        SKIP IF LESS THAN UPPER
0088  10047 026036        JMP CLRNX      TRY NEXT ENTRY
0089  10050 161132        LDA LST5,I     GET BP LINK ADDRESS
0090  10051 006400        CLB
0091  10052 175132        STB LST5,I     CLEAR BP LINK ADDRESS
0092  10053 026036        JMP CLRNX      TRY NEXT ENTRY
0093*
0094  10054 065167  CLBPS LDB LOWER      GET LOWER BP BOUND
0095  10055 007004        CMB,INB        SET TO POSITIVE
0096  10056 061170        LDA UPPER      GET UPPER BOUND (NEG.)
0097  10057 040001        ADA B          SET A = TOTAL WORD COUNT
0098  10060 002021        SSA,RSS        SKIP - SOME BP SECTION TO CLEAR
0099  10061 126030        JMP CLRLT,I    RETURN - NO BP SECTION
0100  10062 071064        STA WDCNT      SET COUNT FOR CLEARING
0101  10063 044310        ADB M2000      ADJUST FOR BP ADDRESS
0102  10064 002400        CLA
0103  10065 170001        STA B,I        CLEAR BO WORD
0104  10066 006004        INB
0105  10067 035064        ISZ WDCNT      SKIP - ALL BP CLEAR
0106  10070 026065        JMP *-3
0107  10071 126030        JMP CLRLT,I    END OF CLEARING
0108*
0109*                                       OUTPUT ABSOLUTE BASE PAGE CODE
0110*
0111*  BPOUT OUTPUTS THE BASE PAGE SECTION OF CODE FOLLOWING LOADING OF
```

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0112*  EACH DISK RESIDENT PROGRAM, BEGINNING WITH THE DISK
0113*  ADDRESS SPECIFIED IN DSKAD.
0114*
0115*  CALLING SEQUENCE:
0116*    A = UPPER BP ADDRESS
0117*    B = LOWER BP ADDRESS
0118*    JSB BPOUT
0119*
0120*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0121*
0122  10072 000000  BPOUT NOP
0123  10073 003004        CMA,INA        COMPLEMENT UPPER ADDRESS
0124  10074 040001        ADA B          ADD LOWER ADDRESS
0125  10075 071322        STA TCNT       SAVE BP LENGTH
0126  10076 044310        ADB M2000      ADJUST FOR BP ADDRESS
0127  10077 075321        STB CURAT      SAVE CURRENT LOWER CORE ADDR
0128  10100 002021        SSA,RSS        SKIP - SOME CODE IN BP
0129  10101 126072        JMP BPOUT,I    RETURN - ALL CODE OUT
0130  10102 061114        LDA DSKAD      GET CURRENT DISK ADDRESS
0131  10103 114127  BPSYO  JSB ADOUT,I    OUTPUT CURRENT BP SECTOR
0132  10104 061114        LDA DSKAD      GET CURRENT DISK ADDRESS
0133  10105 014513        JSB DISKA      INCR DISC ADDRESS
0134  10106 071114        STA DSKAD      SAVE NEXT DISK ADDRESS
0135  10107 065322        LDB TCNT       GET CURRENT LENGTH
0136  10110 044277        ADB P128
0137  10111 075322        STB TCNT       SAVE COUNT FOR NEXT PASS
0138  10112 006021        SSB,RSS        SKIP - MORE TO OUTPUT
0139  10113 126072        JMP BPOUT,I
0140  10114 065321        LDB CURAT      GET CURRENT LOW CORE ADDRESS
0141  10115 044277        ADB P128
0142  10116 075321        STB CURAT      SET NEXT CORE ADDRESS
0143  10117 026103        JMP BPSYO      OUTPUT NEXT SECTOR TO DISK
0144*
0145*                                    CLEAR MEMORY MAP BUFFER
0146*
0147*  CLIST CLEARS THE MEMORY MAP BUFFER WITH BLANKS.
0148*
0149*  CALLING SEQUENCE:
0150*    A = IGNORED
0151*    B = IGNORED
0152*    JSB CLIST
0153*
0154*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0155*
0156  10120 000000  CLIST NOP
0157  10121 065062        LDB AMLST      AMLST = ADDR OF MLIST
0158  10122 060215        LDA N8
0159  10123 071512        STA AMAD       SET BUFFER LENGTH
0160  10124 061314        LDA BLNKS      GET 2 BLANK CHARACTERS
0161  10125 170001        STA B,I        CLEAR BUFFER WORD
0162  10126 006004        INB
0163  10127 035512        ISZ AMAD       ALL WORDS CLEAR?
0164  10130 026125        JMP *-3        NO - CONTINUE CLEARING
0165  10131 126120        JMP CLIST,I    RETURN
```

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0167*
0168*                                          INITIATE MAIN PROGRAM LOADING
0169*
0170*  LOAD IS THE SUBROUTINE FOR ENTRY TO LOADS FOR THOSE
0171*  PROGRAMS WHICH REQUIRE USE OF A NEW BP AND PROGRAM BASE.
0172*
0173*  CALLING SEQUENCE:
0174*    A = IGNORED
0175*    B = IGNORED
0176*    JSB LOAD
0177*
0178*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0179*
0180  10132 000000  LOAD  NOP
0181  10133 007400        CCB
0182  10134 075540        STB HDFLG      SET HEADING FLAG
0183  10135 061531        LDA PPREL      GET PROGRAM RELOCATION ADDRESS
0184  10136 071062        STA TPREL      SET CURRENT PROG RELOC ADDRESS
0185  10137 061530        LDA PBREL      GET BP RELOCATION ADDRESS
0186  10140 071527        STA TBREL      SET CURRENT BP RELOC ADDRESS
0187  10141 016144        JSB LOADS      LOAD PROGRAM
0188  10142 014452        JSB SPACE      NEW LINE
0189  10143 126132        JMP LOAD,I     RETURN
0190*
0191*                                          LOAD, LINK MAIN PROG & SUBS.
0192*
0193*  LOADS IS THE MAIN LOADING SUBROUTINE FOR GENERATING THE ABSOLUTE
0194*  CODE AND LINKING ALL CALLED SUBROUTINES.  IT IS USED BY EACH
0195*  PROGRAM TYPE FOR LOADING.  IT READS THE RELOCATABLE RECORDS FROM
0196*  THE SCRATCH PORTION OF THE DISK, AND WRITES THE ABSOLUTE CODE
0197*  ON THE LOWER (PROTECTED) PORTION OF THE DISK.
0198*
0199*  CALLING SEQUENCE:
0200*    A = IGNORED
0201*    B = IGNORED
0202*    JSB LOADS
0203*
0204*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0205*
0206  10144 000000  LOADS NOP
0207  10145 002400        CLA            SET FLAG FOR NO LIBRARY
0208  10146 073134        STA LIBRY        ROUTINES YET
0209  10147 003400        CCA
0210  10150 071115        STA PLFLG      SET FLAG = NO DBL RECS IN
0211  10151 016120  LOADN JSB CLIST      SET MEMORY MAP BUFFER TO BLANKS
0212  10152 035536        ISZ LFLAG      INCR PROGRAMS-LOADED FLAG
0213  10153 000000        NOP
0214  10154 061062        LDA AMLST      AMLST = ADDR OF MEM MAP BUFFER
0215  10155 071512        STA AMAD       SET CURRENT MEMORY MAP ADDRESS
0216  10156 061540        LDA HDFLG      GET HEADING FORMAT FLAG
0217  10157 002021        SSA,RSS        SKIP IF NEGATIVE (MAIN)
0218  10160 035512        ISZ AMAD       INCR CURRENT MEM MAP ADDR
0219  10161 161117        LDA ID1,I      GET NAME 1,2
0220  10162 171512        STA AMAD,I     SET NAME 1,2 IN MEMORY MAP
0221  10163 035512        ISZ AMAD       INCR CURRENT MEMORY MAP ADDRESS
0222  10164 161120        LDA ID2,I      GET NAME 3 4
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0223  10165 171512          STA AMAD,I     SET NAME 3,4 IN MEMORY MAP
0224  10166 035512          ISZ AMAD       INCR CURRENT MEMORY MAP ADDRESS
0225  10167 161121          LDA ID3,I      GET NAME 5
0226  10170 010247          AND M7400      ISOLATE UPPER CHAR
0227  10171 030337          IOR BLANK      ADD BLANK (OCT 40)
0228  10172 171512          STA AMAD,I     SET NAME 5 IN MEMORY MAP
0229  10173 035540          ISZ HDFLG      SKIP IF HDFLG = -1 (MAIN)
0230  10174 026233          JMP SUBHD      SKIP PRIORITY OUTPUT FOR SUB
0231*
0232  10175 061114          LDA DSKAD      GET CURRENT DISK ADDRESS
0233  10176 071154          STA DSKMN      SAVE INITIAL MAIN DISK ADDRESS
0234  10177 061525          LDA PTYPE      GET PROGRAM TYPE
0235  10200 050232          CPA P5         TYPE = BG SEGMENT?
0236  10201 026206          JMP BGSPL      CLEAR UNRESERVED PART OF PLIST
0237  10202 060257          LDA N128
0238  10203 071511          STA PLCNT      SET PLIST WORD COUNT
0239  10204 065061          LDB PLAD       GET ADDRESS OF PROGRAM LIST
0240  10205 026215          JMP CPLST      CLEAR PROGRAM LIST
0241  10206 061061  BGSPL   LDA PLAD
0242  10207 003004          CMA,INA
0243  10210 041533          ADA PLMAN
0244  10211 040257          ADA N128
0245  10212 071511          STA PLCNT
0246  10213 065533          LDB PLMAN
0247  10214 026223          JMP CPXXX
0248  10215 061117  CPLST   LDA ID1        GET IDENT ADDRESS OF MAIN
0249  10216 170001          STA B,I        SET ADDRESS IN PLIST
0250  10217 006004          INB            INCR CURRENT PLIST ADDRESS
0251  10220 035511          ISZ PLCNT      SKIP = PLIST FULL
0252  10221 002001          RSS            CONTINUE TO CLEAR PLIST
0253  10222 026230          JMP SETMP      NO PLIST CLEARING REQUIRED
0254  10223 002400  CPXXX   CLA
0255  10224 170001          STA B,I        CLEAR PLIST WORD
0256  10225 006004          INB            INCR PLIST ADDRESS
0257  10226 035511          ISZ PLCNT      SKIP = PLIST CLEAR
0258  10227 026224          JMP *-3        CONTINUE CLEARING
0259*
0260  10230 061314  SETMP   LDA BLNKS     BLANKS
0261  10231 071516          STA MLIST+3    SET PRIORITY IN MEMORY MAP
0262  10232 071517          STA MLIST+4    SET RIGHT PAREN IN MEMORY MAP
0263  10233 061052  SUBHD   LDA TPREL      GET CURRENT PROG RELOC ADDR
0264  10234 065063          LDB AMEM5      SET B = ADDR OF MEMORY MAP + 5
0265  10235 015002          JSB CONVD      CONVERT TO DECIMAL/OCTAL
0266  10236 060270          LDA P16
0267  10237 065062          LDB AMLST      AMLST = ADDR OF MEM MAP BUFFER
0268  10240 114102          JSB DRKEY,I    PRINT HEADING
0269  10241 161123          LDA ID5,I      GET DISK ADDRESS
0270  10242 071542          STA DSKRD      SAVE CURRENT DISK INPUT ADDRESS
0271*
0272*                                      READ NAM RECORD FROM DISK
0273  10243 017010          JSB DBIN       GET RECORD FROM DISK
0274  10244 061557          LDA LBUF+1     GET RIC
0275  10245 001723          ALF,RAR        ROTATE TO LOW A
0276  10246 010234          AND M7         ISOLATE RIC
0277  10247 050226          CPA P1         NAM RECORD?
0278  10250 002001          RSS            YES = CONTINUE
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0279   10251 102000          HLT 0B          INVALID DISK RECORD
0280   10252 061564          LDA LBUF+6      GET PROGRAM LENGTH
0281   10253 071166          STA PLGTH       SAVE PROGRAM LENGTH
0282   10254 065052          LDB TPREL       GET PROGRAM RELOCATION BASE
0283   10255 075532          STB RELAD       SET CURRENT RELOCATION ADDRESS
0284   10256 061554          LDA CURAL       GET CURRENT LBUF ADDRESS
0285   10257 040240          ADA P17         ADJUST FOR END OF NAM RECORD
0286   10260 071554          STA CURAL       SET FOR END OF NAM RECORD
0287   10261 061555          LDA LCNT        GET CURRENT LBUF COUNT
0288   10262 040240          ADA P17         ADJUST FOR END OF NAM RECORD
0289   10263 071555          STA LCNT        SET NEW CURRENT COUNT
0290*
0291   10264 063134          LDA LIBRY       IS THIS THE 1ST LIBRARY ROUTINE?
0292   10265 002002          SZA
0293   10266 026300          JMP CLSRC         NO - SKIP
0294   10267 061567          LDA LBUF+9        OTHERWISE, IS THIS ROUTINE
0295   10270 010245          AND M177           TYPE 6 OR 7?
0296   10271 050233          CPA P6
0297   10272 026276          JMP SUBH5
0298   10273 050234          CPA P7
0299   10274 002001          RSS
0300   10275 026300          JMP CLSRC         NO - SKIP
0301   10276 061052  SUBH5   LDA TPREL         YES - SET 1ST LIBRARY ADDRESS
0302   10277 073134          STA LIBRY
0303*
0304*                                         CLASSIFY ENT, EXT, DBL, END RECS
0305   10300 017002  CLSRC   JSB DBSET        GET ADDR OF NEXT WORD IN LBUF
0306   10301 161554          LDA CURAL,I     GET SECOND WORD IN RECORD
0307   10302 064000          LDB A           SAVE WORD IN B
0308   10303 001723          ALF,RAR         ROTATE RIC TO LOW A
0309   10304 010234          AND M7          ISOLATE RIC
0310   10305 050227          CPA P2          ENT RECORD?
0311   10306 026412          JMP DENTR       PROCESS ENT RECORD
0312   10307 050230          CPA P3          DBL RECORD?
0313   10310 026612          JMP DDBLR       PROCESS DBL RECORD
0314   10311 050231          CPA P4          EXT RECORD?
0315   10312 026413          JMP DEXTR       PROCESS EXT RECORD
0316   10313 050232          CPA P5          END RECORD?
0317   10314 002001          RSS             YES - PROCESS END RECORD
0318   10315 102000          HLT 0B          INVALID DISK RECORD
0319*
0320*                                         PROCESS END RECORD
0321   10316 017002          JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0322   10317 017002          JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0323   10320 061052          LDA TPREL       GET CURRENT PROG RELOCATION BASE
0324   10321 141554          ADA CURAL,I     ADD RELOCATION ADDRESS
0325   10322 065540          LDB HDFLG       GET HEADING FLAG
0326   10323 006003          SZB,RSS         SKIP UNLESS MAIN
0327   10324 071156          STA PRENT       SAVE PRIMARY ENTRY POINT FOR ID
0328   10325 015366          JSB INLST       INITIATE LSTX
0329   10326 015372  CLST    JSB LSTX        SET LST ADDRESSES
0330   10327 026334          JMP LSTCR       END OF LST
0331   10330 161130          LDA LST3,I      GET WORD 3 OF LST (ORDINAL)
0332   10331 010247          AND M7400       ISOLATE UPPER CHAR - CLEAR ORD
0333   10332 171130          STA LST3,I      SET NAME 5 IN LST
0334   10333 026326          JMP CLST        CONTINUE CLEARING ORDINALS
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0335   10334 061166  LSTCR LDA PLGTH     GET PROGRAM LENGTH
0336   10335 001265        RAL,CLE,ERA   SET E = SIGN
0337   10336 041052        ADA TPREL     ADD PROGRAM RELOCATION BASE
0338   10337 002040        SEZ           SKIP IF ASSEMBLER PRODUCED
0339   10340 061532        LDA RELAD     GET CURRENT RELOCATION ADDRESS
0340   10341 071052        STA TPREL     SET NEW RELOCATION BASE
0341   10342 070001        STA B         SAVE NEW PROG RELOC BASE IN B
0342   10343 061532        LDA RELAD     GET LAST WORD ADDRESS
0343   10344 003004        CMA,INA
0344   10345 044000        ADB A         ADD RELOC BASE
0345   10346 006003        SZB,RSS       SKIP = FILL SPACE WITH HALTS
0346   10347 026352        JMP *+3       NO HALTS REQUIRED AT END OF PROG
0347   10350 002400        CLA
0348   10351 017167        JSB LABDO     FILL IN LAST BSS WITH ZEROES
0349   10352 060257        LDA N128
0350   10353 071511        STA PLCNT     SET PROGRAM LIST COUNTER
0351   10354 065061        LDB PLAD      PLAD = ADDR OF PROGRAM LIST
0352   10355 160001  PLSCN LDA B,I       GET PROG LIST ENTRY
0353   10356 002003        SZA,RSS       SKIP = ENTRY IN PLIST
0354   10357 026365        JMP CLFLG     CLEAR FLAGS FOR PROGRAMS
0355   10360 002020        SSA           SKIP IF POSITIVE (PROG LOADED)
0356   10361 026374        JMP ENTID     GET NEXT PROGRAM IDENT ADDRESS
0357   10362 006004  EPLST INB           INCR PROGRAM LIST ADDRESS
0358   10363 035511        ISZ PLCNT     SKIP IF END OF PROGRAM LIST
0359   10364 026355        JMP PLSCN     NO = CONTINUE PROG LIST SEARCH
0360   10365 061525  CLFLG LDA PTYPE     GET CURRENT PROGRAM TYPE
0361   10366 050230        CPA P3        TPYE = BG DISK RESIDENT?
0362   10367 126144        JMP LOADS,I   YES = DO NOT CLEAR LOADED FLAGS
0363   10370 050231        CPA P4       TYPE = I/O DRIVER MODULE
0364   10371 126144        JMP LOADS,I   RETURN
0365   10372 015441        JSB CLID3     CLEAR PROG-LOADED FLAGS
0366   10373 126144        JMP LOADS,I   RETURN = ALL FLAGS CLEARED
0367*
0368   10374 001265  ENTID RAL,CLE,ERA   CLEAR SIGN (PROG TO BE LOADED)
0369   10375 071071        STA TIDNT     SET IDENT ADDRESS FOR IDX
0370   10376 071323        STA TBUF      SAVE CURRENT IDENT ADDRESS
0371   10377 075510        STB CURAP     SAVE CURRENT PLIST ADDRESS
0372   10400 015333        JSB IDX       SET IDENT ADDRESSES
0373   10401 102000        HLT 0B        INVALID RETURN = NON-EXISTENT ID
0374   10402 065510        LDB CURAP     GET CURRENT PLIST ADDRESS
0375   10403 161121        LDA ID3,I     GET PROGRAM USAGE FLAG
0376   10404 002014        SLA,INA       SKIP = PROGRAM NOT YET LOADED
0377   10405 026362        JMP EPLST     TEST FOR END OF PLIST
0378   10406 171121        STA ID3,I     SET PROGRAM USAGE FLAG = LOADED
0379   10407 061323        LDA TBUF      GET CURRENT IDENT ADDRESS
0380   10410 170001        STA B,I       SET ENTRY IN PROGRAM LIST
0381   10411 026151        JMP LOADN     LOAD NEXT PROGRAM
0382*
0383*                                     PROCESS ENT/EXT RECORDS
0384   10412 003401  DENTR CCA,RSS       SET ENT FLAG AND SKIP
0385   10413 002400  DEXTR CLA           SET EXT FLAG
0386   10414 071133        STA NXFLG     SAVE ENT/EXT FLAG
0387   10415 060001        LDA B         GET NO. ENTRIES IN EXT/ENT
0388   10416 010243        AND M37       ISOLATE SYMBOL COUNT
0389   10417 003004        CMA,INA
0390   10420 071134        STA EXCNT     SET SYMBOL COUNTER
```

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0391   10421 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0392   10422 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0393   10423 161554  NXSYM   LDA CURAL,I    GET NAME 1,2
0394   10424 071323          STA TBUF       SAVE NAME 1,2 IN TEMP BUFF
0395   10425 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0396   10426 161554          LDA CURAL,I    GET NAME 3,4
0397   10427 071324          STA TBUF+1     SAVE NAME IN TEMP BUFF
0398   10430 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0399   10431 161554          LDA CURAL,I    GET NAME 5
0400   10432 071326          STA TBUF+2     SAVE NAME IN TEMP BUFF
0401   10433 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0402   10434 015366          JSB INLST      INITIATE LSTX
0403   10435 015372  ENEX1   JSB LSTX       SET LST ADDRESSES
0404   10436 102000          HLT 0B         ENT/EXT NOT FOUND IN LST
0405   10437 061323          LDA TBUF       GET NAME 1,2
0406   10440 151126          CPA LST1,I     EQUAL?
0407   10441 002001          RSS            YES = CONTINUE
0408   10442 026435          JMP ENEX1      NO = TRY NEXT LST ENTRY
0409   10443 061324          LDA TBUF+1     GET NAME 3,4
0410   10444 151127          CPA LST2,I     EQUAL?
0411   10445 002001          RSS            YES = CONTINUE
0412   10446 026435          JMP ENEX1      NO = TRY NEXT LST ENTRY
0413   10447 061326          LDA TBUF+2     GET NAME 5
0414   10450 010247          AND M7400      ISOLATE UPPER CHAR
0415   10451 151130          CPA LST3,I     EQUAL?
0416   10452 002001          RSS            YES = CONTINUE
0417   10453 026435          JMP ENEX1      NO = TRY NEXT LST ENTRY
0418*
0419   10454 061133          LDA NXFLG      GET ENT/EXT FLAG
0420   10455 002003          SZA,RSS        SKIP IF ENTRY
0421   10456 026515          JMP EXT1       PROCESS EXT
0422   10457 065052          LDB TPREL      GET CURRENT PROG RELOC BASE
0423   10460 145554          ADB CURAL,I    ADD CURRENT RELOCATION VALUE
0424   10461 075165          STB OPRND      SAVE ABS ENTRY PT. ADDRESS
0425   10462 161132          LDA LST5,I     GET BP LINK ADDRESS
0426   10463 002003          SZA,RSS        SKIP = BP LINK ADDR SET
0427   10464 016760          JSB BPSCN      SET BP LINK ADDR, BP LINK
0428   10465 171132          STA LST5,I     SET BP LINK ADDRESS IN LST
0429   10466 016774          JSB SETOP      SET OPERAND IN BASE PAGE
0430   10467 102501          LIA 1          GET SWITCH REGISTER
0431   10470 002021          SSA,RSS        SKIP = SWITCH 15 UP (LIST ENTS)
0432   10471 026513          JMP NLENT      SUPPRESS PRINTING OF MAP
0433   10472 016120          JSB CLIST      CLEAR MEMORY MAP BUFFER
0434   10473 061315          LDA BLAST      GET BLANK, ASTERISK
0435   10474 071514          STA MLIST+1    SET IN MAP
0436   10475 161126          LDA LST1,I     GET NAME 1,2
0437   10476 071515          STA MLIST+2    SET IN MEMORY MAP
0438   10477 161127          LDA LST2,I     GET NAME 3,4
0439   10500 071516          STA MLIST+3    SET IN MEMORY MAP BUFFER
0440   10501 161130          LDA LST3,I     GET NAME 5
0441   10502 010247          AND M7400      ISOLATE UPPER CHAR
0442   10503 030337          IOR BLANK      SET LOWER CHARACTER = BLANK
0443   10504 071517          STA MLIST+4    SET NAME 5 IN MEM MAP
0444   10505 061165          LDA OPRND      GET ABSOLUTE ENTRY PT. ADDRESS
0445   10506 065063          LDB AMEM5      GET ADDRESS OF MESSAGE
0446   10507 015002          JSB CONVD      CONVERT TO DECIMAL/OCTAL
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0447   10510 060270          LDA P16
0448   10511 065062          LDB AMLST       GET ADDRESS OF MEM MAP BUFFER
0449   10512 114102          JSB DRKEY,I     PRINT ENTRY POINT
0450   10513 017002  NLENT   JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0451   10514 026607          JMP EXEND       PROCESS NEXT SYMBOL
0452*
0453   10515 061325  EXT1    LDA TBUF+2      GET ORDINAL
0454   10516 171130          STA LST3,I      SET ORDINAL IN LST
0455   10517 161132          LDA LST5,I      GET BP LINK ADDRESS
0456   10520 002003          SZA,RSS         SKIP = BP LINK ADDRESS SET
0457   10521 114142          JSB AALOC,I     ALLOCATE NEW BP LOCATION
0458   10522 171132          STA LST5,I      SET NEW BP LINK ADDRESS
0459   10523 161131          LDA LST4,I      GET IDENT ADDRESS
0460   10524 002003          SZA,RSS         SKIP = EXT DEFINED
0461   10525 026607          JMP EXEND       IGNORE UNDEFINED PROGRAM CALL
0462   10526 071071          STA TIDNT       SET ID ADDR FOR IDX
0463   10527 061117          LDA ID1         GET CURRENT IDENT ADDRESS
0464   10530 071323          STA TBUF        SAVE CURRENT IDENT ADDRESS
0465   10531 015333          JSB IDX         SET IDENT ADDRESSES
0466   10532 102000          HLT 0B          IDENT NOT FOUND IN LIST
0467   10533 161124          LDA ID6,I       GET M/S, TYPE
0468   10534 071324          STA TBUF+1      SAVE M/S, TYPE
0469   10535 161121          LDA ID3,I       GET PROGRAM USAGE FLAG
0470   10536 071326          STA TBUF+2      SAVE USAGE FLAG
0471   10537 061323          LDA TBUF        GET CURRENT IDENT ADDRESS
0472   10540 071071          STA TIDNT       SET CURRENT IDENT ADDR
0473   10541 015333          JSB IDX         SET IDENT ADDRESSES
0474   10542 102000          HLT 0B          CURRENT IDENT NOT FOUND IN LIST
0475   10543 061324          LDA TBUF+1      GET M/S, TYPE FOR EXT
0476   10544 001265          RAL,CLE,ERA     SET E = M/S
0477   10545 010245          AND M177        ISOLATE TYPE
0478   10546 050233          CPA P6          TYPE = LIBRARY?
0479   10547 026554          JMP LIBUT       YES = TEST FOR LOADING
0480   10550 050234          CPA P7
0481   10551 026554          JMP LIBUT
0482   10552 002040          SEZ             SKIP = NOT MAIN PROGRAM
0483   10553 026607          JMP EXEND       IGNORE PROGRAM CALL
0484   10554 060257  LIBUT   LDA N128
0485   10555 071511          STA PLCNT       SET PROGRAM LIST COUNTER
0486   10556 065061          LDB PLAD        GET PROGRAM LIST ADDRESS
0487   10557 160001  PLEXT   LDA B,I         GET PROG LIST ENTRY
0488   10560 002003          SZA,RSS         SKIP IF IDENT ADDRESS
0489   10561 026573          JMP SEXT        MAKE ENTRY IN PROGRAM LIST
0490   10562 001265          RAL,CLE,ERA     CLEAR SIGN
0491   10563 151131          CPA LST4,I      PROGRAM PREVIOUSLY CALLED?
0492   10564 026607          JMP EXEND       YES = IGNORE EXT SYMBOL
0493   10565 006004          INB             INCR PROG LIST ADDR
0494   10566 035511          ISZ PLCNT       END OF PROGRAM LIST?
0495   10567 026557          JMP PLEXT       NO = CONTINUE PROGRAM LIST SCAN
0496   10570 061251          LDA ERR15       SET ERROR CODE = PROG LIST FULL
0497   10571 014456          JSB ERROR       PRINT DIAGNOSTIC
0498   10572 026607          JMP EXEND       TEST FOR ALL EXTS PROCESSED
0499   10573 061325  SEXT    LDA TBUF+2      GET PROGRAM USAGE FLAG
0500   10574 000010          SLA             SKIP = PROGRAM NOT LOADED
0501   10575 026607          JMP EXEND       OMIT PROGRAM LIST ENTRY
0502   10576 061525          LDA PTYPE
```

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0503   10577 002002          SZA
0504   10600 026604          JMP STIDF
0505   10601 161131          LDA LST4,I
0506   10602 170001          STA B,I
0507   10603 026607          JMP EXEND
0508   10604 161131  STIDF   LDA LST4,I
0509   10605 030342          IOR MBIGN       SET SIGN TO SHOW PROG NOT LOADED
0510   10606 170001          STA B,I         SET IN PROGRAM LIST
0511   10607 035134  EXEND   ISZ EXCNT       SKIP = ALL SYMBOLS PROCESSED
0512   10610 026423          JMP NXSYM       NO = PROCESS NEXT SYMBOL
0513   10611 026380          JMP CLSRC       NO = CLASSIFY NEXT RECORD
0514*
0515*                                         PROCESS DBL RECORDS
0516   10612 060001  DDBLR   LDA B            GET COUNT
0517   10613 010244          AND M77         ISOLATE COUNT
0518   10614 003004          CMA,INA
0519   10615 071134          STA EXCNT       SET INSTRUCTION COUNT
0520   10616 017002          JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0521   10617 017002          JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0522*
0523   10620 165584          LDB CURAL,I     GET RELOCATION ADDRESS
0524   10621 075157          STB DBLAD       SAVE RELOCATION ADDRESS
0525   10622 035115          ISZ PLFLG       SKIP = FIRST DBL RECORD
0526   10623 026640          JMP DBL0        IGNORE SUBSEQUENT RECORDS
0527   10624 161124          LDA ID6,I       GET TYPE
0528   10625 010245          AND M177        ISOLATE TYPE
0529   10626 050227          CPA P2          TYPE = RT DISK RESIDENT?
0530   10627 026635          JMP HABSS       SET NEW MEMORY BOUND
0531   10630 050230          CPA P3          TYPE = BG DISK RESIDENT?
0532   10631 026635          JMP HABSS       SET NEW MEMORY BOUND
0533   10632 050232          CPA P5          TYPE = BG SEGMENT?
0534   10633 002001          RSS
0535   10634 006400          CLB             SET PGMAD = 0 FOR RESIDENTS
0536   10635 075155  HABSS   STB BSSDP       SAVE INITIAL PROG DISPLACEMENT
0537   10636 045532          ADB RELAD       ADD RELOCATION ADDRESS
0538   10637 075532          STB RELAD       SET NEW RELOCATION ADDRESS
0539   10640 017002  DBL0    JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0540   10641 165554  DBL1    LDB CURAL,I     GET RELOCATION BYTES
0541   10642 075160          STB REKEY       SAVE FOR RELOCATION TYPE
0542   10643 060220          LDA N5
0543   10644 071161          STA INSCN       SET RELOCATION BYTE COUNT
0544   10645 017002          JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0545*
0546   10646 061160  DBL2    LDA REKEY       GET RELOCATION BYTES
0547   10647 001723          ALF,RAR         ROTATE TO LOW A
0548   10650 071160          STA REKEY       SAVE FOR NEXT INSTRUCTION WORD
0549   10651 010234          AND M7          ISOLATE CURRENT BYTE
0550   10652 050231          CPA P4          EXTERNAL REFERENCE?
0551   10653 026677          JMP DBL4        YES = GET LINK ADDRESS
0552   10654 050232          CPA P5          MEMORY REFERENCE?
0553   10655 026720          JMP DBL6        YES = CHECK FOR INDIRECT LINK
0554   10656 041050          ADA RBTAD       ADD RELOCATION BASE TABLE ADDR
0555   10657 160000          LDA A,I         GET RELOCATION BASE
0556   10660 141554          ADA CURAL,I     ADD CURRENT INSTRUCTION WORD
0557*
0558   10661 065532  DBL3    LDB RELAD       GET PREVIOUS RELOCATION ADDRESS
```

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0559  10662 007004          CMB,INB        SET TO NEGATIVE
0560  10663 045157          ADB DBLAD      ADD CURRENT RELOCATION ADDRESS
0561  10664 045052          ADB TPREL      ADD CURRENT PROG RELOCATION BASE
0562  10665 006004          INB            INCR FOR NEXT LOCATION
0563  10666 017167          JSB LABDO      OUTPUT ABSOLUTE WORD
0564  10667 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0565  10670 035134          ISZ EXCNT      SKIP = LAST INSTRUCTION OUT
0566  10671 002001          RSS            NO = CONTINUE
0567  10672 026300          JMP CLSRC      YES = CLASSIFY NEXT RECORD
0568  10673 035157          ISZ DBLAD      INCR DBL RELOCATION ADDRESS
0001  10674 035161          ISZ INSCN      SKIP IF NEW RELOCATION BYTE
0002  10675 026646          JMP DBL2       NO = PROCESS NEXT INSTRUCTION
0003  10676 026641          JMP DBL1       YES = GET NEXT RELOCATION BYTE
0004*
0005  10677 161554  DBL4    LDA CURAL,I    GET CURRENT DBL WORD
0006  10700 010246          AND M377       ISOLATE ORDINAL
0007  10701 071162          STA EXORD      SAVE ORDINAL
0008  10702 015366          JSB INLST      INITIALIZE LSTX
0009  10703 015372  DBL5    JSB LSTX       SET LST ADDRESSES
0010  10704 102000          HLT 0B         ORDINAL NOT FOUND
0011  10705 161130          LDA LST3,I     GET WORD 3 OF LST ENTRY
0012  10706 010246          AND M377       ISOLATE ORDINAL
0013  10707 051162          CPA EXORD      SAME ORDINALS?
0014  10710 002001          RSS            YES = CONTINUE
0015  10711 026703          JMP DBL5       NO = CONTINUE LST SEARCH
0016  10712 165132          LDB LST5,I     GET BP LINK ADDRESS
0017  10713 161554          LDA CURAL,I    GET CURRENT DBL WORD
0018  10714 010307          AND M1740      ISOLATE INSTRUCTION CODE
0019  10715 030342          IOR MSIGN      SET SIGN = 1 (INDIRECT)
0020  10716 030001          IOR B          SET ADDRESS = BP LINK ADDRESS
0021  10717 026661          JMP DBL3       OUTPUT INSTRUCIION
0022*
0023  10720 161554  DBL6    LDA CURAL,I    GET CURRENT DBL WORD
0024  10721 071163          STA INSTR      SAVE INSTRUCTION CODE
0025  10722 017002          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0026  10723 061163          LDA INSTR      GET INSTRUCTION CODE
0027  10724 065052          LDB TPREL      GET CURRENT PROG RELOC ADDR
0028  10725 001332          RAR,SLA,RAL    SKIP IF PROGRAM REFERENCE
0029  10726 065054          LDB COMAD      REPLACE PROG WITH COMMON BASE
0030  10727 145554          ADB CURAL,I    ADD CURRENT INSTR ADDRESS
0031  10730 010307          AND M1740      ISOLATE INSTRUCTION CODE
0032  10731 002020          SSA            SKIP IF DIRECT REFERENCE
0033  10732 044342          ADB MSIGN      SET SIGN = 1
0034  10733 071163          STA INSTR      SAVE INSTRUCTION CODE
0035  10734 061052          LDA TPREL     FORM CURRENT RELOCATION ADDRESS
0036  10735 041157          ADA DBLAD
0037  10736 010306          AND M0760      ISOLATE PAGE NUMBER
0038  10737 071164          STA PAGNO      SAVE CURRENT PAGE NUMBER
0039  10740 060001          LDA B          GET INSTRUCTION ADDRESS
0040  10741 010306          AND M0760      ISOLATE PAGE NUMBER
0041  10742 051164          CPA PAGNO      SAME PAGE?
0042  10743 026753          JMP DBL7       YES = NO INDIRECT ADDRESS NEEDED
0043  10744 075165          STB OPRND      SAVE INSTRUCTION ADDRESS
0044  10745 016760          JSB BPSCN      SCAN BP FOR SAME OPERAND
0045  10746 016774          JSB SETOP      SET OPERAND IN BP LOCATION
0046  10747 030342          IOR MSIGN      SET SIGN = 1
```

```
0047   10750 065163          LDB INSTR      GET INSTRUCTION CODE
0048   10751 030001          IOR B          ADD OPERAND TO INSTRUCTION
0049   10752 026661          JMP DBL3       OUTPUT INSTRUCTION
0050   10753 060001  DBL7    LDA B          GET OPERAND ADDRESS
0051   10754 010320          AND M1777      ISOLATE PAGE LOCATION
0052   10755 030310          IOR M2000      SET Z/C = 1 (CURRENT)
0053   10756 031163          IOR INSTR      ADD INSTRUCTION CODE
0054   10757 026661          JMP DBL3       OUTPUT INSTRUCTION WORD
```

```
0056*
0057*                                          GET BP LINK ADDR, SET BP VALUE
0058*
0059*  BPSCN SCANS THE RESIDENT AND CURRENT SECTIONS OF BASE PAGE
0060*  FOR A VALUE EQUAL TO THE CURRENT OPERAND.  IF SUCH A VALUE
0061*  IS FOUND, THE ADDRESS OF THE OPERAND IS RETURNED
0062*  IN THE A-REGISTER.  OTHERWISE, A NEW BP LINK WORD IS
0063*  RESERVED AND THE ADDRESS OF THIS WORD RETURNED IN A.
0064*
0065*  CALLING SEQUENCE:
0066*    A = IGNORED
0067*    B = IGNORED
0068*    JSB BPSCN
0069*
0070*  RETURN:
0071*    A = BP LINK ADDRESS FOR CURRENT OPERAND
0072*    B = DESTOYED
0073*
0074  10760 000000  BPSCN NOP            SCAN BP AREA FOR SAME OPERAND
0075*
0076  10761 061143        LDA LRBP       GET LOW RESIDENT BOUND
0077  10762 065144        LDB URBP       GET HIGH RESIDENT BOUND
0078  10763 114143        JSB ASCBP,I    SCAN AREA FOR SAME OPERAND
0079*
0080  10764 061145        LDA LBBP       GET LOW BACKGROUND BOUND
0081  10765 065146        LDB UBBP       GET HIGH BACKGROUND BOUND
0082  10766 114143        JSB ASCBP,I    SCAN AREA FOR SAME OPERAND
0083*
0084  10767 061530        LDA PBREL      GET LOW CURRENT BOUND
0085  10770 065527        LDB TBREL      GET HIGH CURRENT BOUND
0086  10771 114143        JSB ASCBP,I    SCAN AREA FOR SAME OPERAND
0087*
0088  10772 114142        JSB AALOC,I    ALLOCATE NEW BP LINK ADDRESS
0089  10773 126760  SCOUT JMP BPSCN,I    RETURN - A = BP LINK ADDRESS
0090*
0091*                                          SET OPERAND IN BP LOCATION
0092*
0093*  SETOP SETS THE CURRENT OPERAND IN THE BP LOCATION
0094*  SPECIFIED BY THE ADDRESS IN A.
0095*
0096*  CALLING SEQUENCE:
0097*    A = CURRENT BP LINK ADDRESS
0098*    B = IGNORED
0099*    JSB SETOP
0100*
0101*  RETURN:
0102*    A = BP LINK ADDRESS
0103*    B = DESTROYED
0104*
0105  10774 000000  SETOP NOP
0106  10775 040310        ADA M2000      ADJUST BP LINK ADDRESS
0107  10776 065165        LDB OPRND      GET OPERAND
0108  10777 174000        STB A,I        SET BP VALUE IN BP LOCATION
0109  11000 040302        ADA L2000      ADJUST FOR BP ADDRESS
0110  11001 126774        JMP SETOP,I    RETURN - A = BP LINK ADDRESS
0111*
```

```
                                          READ RELOCATABLE RECORD CONTROL

 DBSET ESTABLISHES THE ADDRESS OF THE NEXT WORD OF THE RELOCATABLE
 RECORD IN LBUF.  IF LBUF HAS BEEN PROCESSED, IT ISSUES A CALL TO
 DBIN TO READ ANOTHER PACKED RELOCATABLE RECORD.

 CALLING SEQUENCE:
   A = IGNORED
   B = IGNORED
   JSB DBSET

 RETURN: CONTENTS OF A AND B ARE DESTROYED

11002 000000  DBSET NOP
11003 035554        ISZ CURAL      INCR CURRENT LBUF ADDRESS
11004 035555        ISZ LCNT       SKIP = END OF LBUF
11005 127002        JMP DBSET,I    RETURN
11006 017010        JSB DBIN       READ NEXT RELOCATABLE REC
11007 127002        JMP DBSET,I    RETURN

                                          READ PACKED RELOCATABLE RECS

 THE DBIN SUBROUTINE READS THE PACKED RELOCATABLE RECORDS FROM
 THE DISK AS SPECIFIED BY THE DISK ADDRESS AT DSKRD.

 CALLING SEQUENCE:
   A = IGNORED
   B = IGNORED
   JSB DBIN

 RETURN: CONTENTS OF A AND B ARE DESTROYED.

11010 000000  DBIN  NOP
11011 061542        LDA DSKRD      GET CURRENT DISK ADDRESS
11012 065055        LDB ALBUF      GET ADDRESS OF LBUF
11013 075554        STB CURAL      SET CURRENT LBUF ADDRESS
11014 014534        JSB DISKI      READ RECORD FROM DISK
11015 061542        LDA DSKRD      GET DISK ADDRESS
11016 014513        JSB DISKA      INCR DISK ADDRESS
11017 071542        STA DSKRD      SET NEXT DISK ADDRESS
11020 060257        LDA N128
11021 071555        STA LCNT       SET CURRENT LBUF COUNT
11022 127010        JMP DBIN,I     RETURN


  GENID GENERATES THE CURRENT ID SEGMENT FOR THE PROGRAM LOADED.

 CALLING SEQUENCE:
   B = IGNORED
   JSB GENID

 RETURN: CONTENTS OF A AND B ARE DESTROYED

11023 000000  GENID NOP
11024 003400        CCA
11025 071115        STA PLFLG      SAVE ID SEGMENT LENGTH FLAG
```

```
0168*                                       GENERATE ID SEGMENT
0169   11026 061537         LDA IMAIN
0170   11027 071071         STA TIDNT       SET ADDRESS FOR IDX
0171   11030 015333         JSB IDX         SET IDENT ADDRESSES
0172   11031 102000         HLT 0           NO IDENT FOUND
0173   11032 161117         LDA ID1,I       GET NAME 1,2
0174   11033 017135         JSB OUTID       OUTPUT WORD TO ID SEGMENT BUFFER
0175   11034 161120         LDA ID2,I       GET NAME 3,4
0176   11035 017135         JSB OUTID       OUTPUT WORD TO ID SEGMENT BUFFER
0177   11036 161124         LDA ID6,I       GET TYPE
0178   11037 010245         AND M177        ISOLATE TYPE
0179   11040 070001         STA B           SAVE TYPE IN B
0180   11041 161121         LDA ID3,I       GET NAME 5
0181   11042 010247         AND M7400       ISOLATE NAME 5
0182   11043 030001         IOR B           ADD TYPE TO NAME 5
0183   11044 017135         JSB OUTID       OUTPUT WORD TO ID SEGMENT BUFFER
0184   11045 061154         LDA DSKMN       GET INITIAL MAIN DISK ADDRESS
0185   11046 017135         JSB OUTID       OUTPUT WORD TO ID SEGMENT BUFFER
0186   11047 061531         LDA PPREL
0187   11050 065525         LDB PTYPE
0188   11051 054232         CPB P5
0189   11052 061535         LDA BSPAD
0190   11053 041155         ADA BSSDP
0191   11054 071323         STA TBUF
0192   11055 003004         CMA,INA
0193   11056 041052         ADA TPREL
0194   11057 040245         ADA P127
0195   11060 010317         AND M7600
0196   11061 001727         ALF,ALF
0197   11062 001200         RAL
0198   11063 071324         STA TBUF+1      NUMBER OF SECT.MAIN.
0199   11064 061530         LDA PBREL
0200   11065 054232         CPB P5
0201   11066 061534         LDA BSBAD
0202   11067 071325         STA TBUF+2      STORE LOW BASE
0203   11070 003004         CMA,INA
0204   11071 041527         ADA TBREL
0205   11072 040245         ADA P127
0206   11073 010317         AND M7600
0207   11074 001727         ALF,ALF
0208   11075 001200         RAL
0209   11076 041324         ADA TBUF+1
0210   11077 017135         JSB OUTID     OUTPUT NUMBER OF SECTORS
0211   11100 061323         LDA TBUF
0212   11101 017135         JSB OUTID     OUTPUT LOW MAIN
0213   11102 061052         LDA TPREL
0214   11103 017135         JSB OUTID     OUTPUT HIGH MAIN
0215   11104 061325         LDA TBUF+2
0216   11105 017135         JSB OUTID      OUTPUT LOW BASE
0217   11106 061527         LDA TBREL
0218   11107 017135         JSB OUTID     OUTPUT HIGH BASE
0219   11110 061156         LDA PRENT
0220   11111 017135         JSB OUTID     OUTPUT PRIMARY ENTRY
0221   11112 063134         LDA LIBRY      IF LIB ROUTINES PRESENT, OUTPUT
0222   11113 002003         SZA,RSS          ADDR OF 1ST LIB ROUTINE, ELSE
0223   11114 061052         LDA TPREL     OUTPUT LAST WORD ADDRESS OF PROG
```

```
0224   11115 017135          JSB OUTID
0225   11116 034402          ISZ IDFLG
0226   11117 060402          LDA IDFLG
0227   11120 050265          CPA P11
0228   11121 002001          RSS
0229   11122 127023          JMP GENID,I  RETURN--ID SEGMENT---
0230   11123 003400          CCA
0231   11124 017135          JSB OUTID
0232   11125 060217          LDA N6
0233   11126 070402          STA IDFLG
0234   11127 002400          CLA
0235   11130 017135          JSB OUTID
0236   11131 034402          ISZ IDFLG
0237   11132 027127          JMP *-3
0238   11133 127023          JMP GENID,I
0239*
0240   11134 000000  LIBRY NOP            ADDR OF 1ST LIBRARY ROUTINE
0241*
0242*                                      OUTPUT ID SEGMENT WORD TO IBUF
0243*
0244*  OUTID PACKS THE WORDS FOR THE ID SEGMENTS IN THE ID SEGMENT
0245*  BUFFER AND WRITES THE BUFFER ON THE DISK WHEN IT CONTAINS
0246*  64 WORDS.
0247*
0248*  CALLING SEQUENCE:
0249*    A = CURRENT ID SEGMENT WORD
0250*    B = IGNORED
0251*    JSB OUTID
0252*
0253*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0254*
0255   11135 000000  OUTID NOP
0256   11136 171756          STA CURAI,I    PUT WORD INTO ID BUFFER
0257   11137 035756          ISZ CURAI      INCR CURRENT ID BUFFER ADDRESS
0258   11140 035757          ISZ ICNT       SKIP = IBUF FULL
0259   11141 127135          JMP OUTID,I    RETURN
0260   11142 061524          LDA DSKID      GET CURRENT DRCTRY DISC ADDRESS
0261   11143 050371          CPA DSKAB      (ALLOW DIRECTORY TO START
0262   11144 027150          JMP OUT1           ON SECTOR ZERO)
0263   11145 010246          AND M377       ISOLATE SECTOR#
0264   11146 002003          SZA,RSS        IF SECTOR# = 0, TRACK BOUNDARY
0265   11147 027164          JMP DIROF        HAS BEEN CROSSED - CRASH!
0266   11150 061524  OUT1    LDA DSKID      GET CURRENT ID SEG DISC ADDR
0267   11151 065057          LDB AIBUF      GET ID BUFFER ADDRESS
0268   11152 014540          JSB DISKO      WRITE ID SEGMENT REC ON DISK
0269   11153 065057          LDB AIBUF      GET BUFFER ADDRESS
0270   11154 075756          STB CURAI      SET NEW CURRENT IBUF ADDRESS
0271   11155 014441          JSB BUFCL      CLEAR ID BUFFER
0272   11156 061524          LDA DSKID      GET CURRENT ID SEGMENT DISK ADDR
0273   11157 014513          JSB DISKA      INCREMENT DISK ADDRESS
0274   11160 071524          STA DSKID      SAVE NEXT DISK ID ADDRESS
0275   11161 060257          LDA N128
0276   11162 071757          STA ICNT       SET CURRENT IBUF COUNT
0277   11163 127135          JMP OUTID,I    RETURN
0278*
0279   11164 063166  DIROF LDA ERR11
```

```
0280  11165 014464          JSB IRERR
0281*
0282  11166 030461  ERR11 ASC 1,11
0283*
0284*                                       OUTPUT ABSOLUTE PROGRAM WORD
0285*
0286*  LABDO PUTS OUT THE CURRENT ABSOLUTE CODE WORD FOR THE PROGRAM
0287*  BEING LOADED.  IT FILLS THE GAPS WITH HALT CODES IF THE
0288*  CURRENT WORD DOES NOT FALL IN THE NEXT POSITION.  IN
0289*  ADDITION, IT CHECKS FOR PROGRAM OVERLAY AND PRINTS A DIAGNOSTIC
0290*  IF THE CURRENT PROGRAM WORD OVERLAYS A PREFIOUSLY-GENERATED
0291*  SECTION OF CODE.  THE CURRENT PROG RELOCATION ADDRESS
0292*  IS PRINTED WITH THE DIAGNOSTIC, BUT THE ORIGINALLY-
0293*  GENERATED CODE IS NOT MODIFIED.
0294*
0295*  CALLING SEQUENCE:
0296*    A = CURRENT ABSOLUTE CODE WORD
0297*    B = CURRENT DISPLACEMENT FROM PREVIOUS WORD
0298*    JSB LABDO
0299*
0300*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0301*
0302  11167 000000  LABDO NOP
0303  11170 071152         STA TEMPP      SAVE PROGRAM WORD
0304  11171 007026         CMB,SSB,INB,SZB  SKIP = OVERLAY
0305  11172 027211         JMP TSTAB-1
0306  11173 061255         LDA ERR19      SET ERROR CODE = PROGRAM OVERLAY
0307  11174 014466         JSB ERROR      PRINT DIAGNOSTIC
0308  11175 061157         LDA DBLAD      GET CURRENT PROG RELOC ADDRESS
0309  11176 065060         LDB ATBUF      GET ADDRESS OF TBUF
0310  11177 015002         JSB CONVD      CONVERT TO DECIMAL/OCTAL IN TBUF
0311  11200 061316         LDA ULPAR      GET UPPER CHAR LEFT PAREN
0312  11201 031323         IOR TBUF       ADD LEFT PAREN TO FIRST DIGIT
0313  11202 071323         STA TBUF       SET LEFT PAREN, FIRST DIGIT
0314  11203 061317         LDA RPARB      GET RIGHT PAREN, BLANK
0315  11204 071326         STA TBUF+3     SET RIGHT PAREN IN BUFFER
0316  11205 060234         LDA P7
0317  11206 065060         LDB ATBUF      GET ADDRESS OF TBUF
0318  11207 114102         JSB DRKEY,I    PRINT RELOC ADDR OF OVERLAY
0319  11210 127167         JMP LABDO,I    RETURN = NO OUTPUT
0320*
0321  11211 075153         STB ABCNT      SAVE ABSOLUTE COUNT
0322  11212 035153  TSTAB ISZ ABCNT      SKIP = PUT OUT LAST WORD
0323  11213 027220         JMP CLOUT      SET HALT 0 INTO BSS
0324  11214 061152         LDA TEMPP      GET LAST WORD
0325  11215 171135         STA CURAD,I    SET INTO LOAD BUFFER
0326  11216 017224         JSB TSTEL      TEST FOR BUFFER FULL
0327  11217 127167         JMP LABDO,I    RETURN
0328*
0329  11220 002400  CLOUT CLA             CLEAR SKIPPED AREA
0330  11221 171135         STA CURAD,I    SET INTO LOAD BUFFER
0331  11222 017224         JSB TSTEL      TEST FOR BUFFER FULL
0332  11223 027212         JMP TSTAB      OUTPUT NEXT WORD
0333*
0334*                                       TEST FOR ABSOLUTE BUFFER FULL
0335*
```

```
0336*  TSTEL PUTS OUT THE CURRENT ABSOLUTE BUFFER WHEN IT
0337*  CONTAINS 128 WORDS OF CODE. IN ADDITION, IT CHECKS FOR
0338*  POSSIBLE PROGRAM OVERFLOW AND PRINTS A DIAGNOSTIC.
0339*
0340*  CALLING SEQUENCE:
0341*    A = IGNORED
0342*    B = IGNORED
0343*    JSB TSTEL
0344*
0345*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0346*
0347  11224 000000  TSTEL NOP
0348  11225 061532        LDA RELAD     GET ABSOLUTE ADDRESS
0349  11226 035532        ISZ RELAD     INCR ABSOLUTE ADDRESS
0350  11227 003004        CMA,INA       COMPLEMENT CURRENT RELOC ADDR
0351  11230 041103        ADA LWASM     ADD LAST WORD AVAIL SYSTEM MEM
0352  11231 002021        SSA,RSS       SKIP = INVALID RELOCATION ADDR
0353  11232 027235        JMP NOVER     NO MEMORY OVERFLOW
0354  11233 061254        LDA ERR18     SET ERROR CODE = MEMORY OVERFLOW
0355  11234 014456        JSB ERROR     PRINT DIAGNOSTIC
0356  11235 035135  NOVER ISZ CURAD     INCR CURRENT DBUF ADDRESS
0357  11236 035136        ISZ DCNT      SKIP = DBUF FULL
0358  11237 127224        JMP TSTEL,I   RETURN = LBUF NOT FULL
0359  11240 017250        JSB DBOUT     WRITE DBUF ON DISK
0360  11241 127224        JMP TSTEL,I   RETURN
0361*
0362*                                   OUTPUT REST (IF ANY) OF ABS. REC
0363*
0364*  REMDO PUTS OUT THE CURRENT SECTOR IF IT CONTAINS ANY WORDS OF
0365*  ABSOLUTE CODE.  THIS IS NORMALLY DONE WHEN THE CODE FOR THE
0366*  MAIN PROGRAM SECTION HAS BEEN GENERATED.
0367*
0368*  CALLING SEQUENCE:
0369*    A = IGNORED
0370*    B = IGNORED
0371*    JSB REMDO
0372*
0373*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0374*
0375  11242 000000  REMDO NOP
0376  11243 061136        LDA DCNT      GET CURRENT DBUF COUNT
0377  11244 050257        CPA N128      BUFFER EMPTY?
0378  11245 127242        JMP REMDO,I   YES = RETURN
0379  11246 017250        JSB DBOUT     WRITE DBUF ON DISK
0380  11247 127242        JMP REMDO,I   RETURN
0381*
0382*                                   DUMP DBUF TO DISK
0383*
0384*  DBOUT WRITES THE CONTENTS OF THE ABSOLUTE BUFFER ON THE DISK
0385*  AT THE DISK ADDRESS SPECIFIED BY DSKAD.
0386*
0387*  CALLING SEQUENCE:
0388*    A = IGNORED
0389*    B = IGNORED
0390*    JSB DBOUT
0391*
```

```
0392*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0393*
0394   11250 000000  DBOUT NOP
0395   11251 061114        LDA DSKAD     GET CURRENT DISK ADDRESS
0396   11252 050476        CPA LOLIB     OVERRUNNING LIBRY IN SCRATCH?
0397   11253 024474        JMP LIBER      =YES, CRASH!
0398   11254 065056        LDB ADBUF     GET ADDRESS OF DBUF
0399   11255 014540        JSB DISKO     WRITE RECORD ON DISK
0400   11256 065056        LDB ADBUF     GET ADDRESS OF DBUF
0401   11257 075135        STB CURAD     SET CURRENT DBUF ADDRESS
0402   11260 014441        JSB BUFCL     CLEAR LBUF
0403   11261 061114        LDA DSKAD     GET CURRENT DISK ADDRESS
0404   11262 014513        JSB DISKA     UPDATE DISC ADDRESS
0405   11263 071114        STA DSKAD     SET NEXT DISK ADDRESS
0406   11264 060257        LDA N128
0407   11265 071136        STA DCNT      SET CURRENT DBUF COUNT
0408   11266 127250        JMP DBOUT,I   RETURN
0409*
0410* ISS PROTECT/UNPROTECT ROUTINE
0411*
0412   11267 000000  ISSPR NOP
0413   11270 003000        CMA
0414   11271 073361        STA PTRK      SET END TRK/TRK CNTR
0415   11272 063355        LDA N46
0416   11273 070257        STA N128      SET FOR 1=TRK BFR
0417   11274 077357        STB TRFLG     SET FLAG BIT
0418   11275 067356        LDB ISSIN
0419   11276 074347        STB DWRT      SET FOR ISS INIT, WRITE
0420   11277 061111  LOOPT LDA HDMSK     SET UP HEAD LOOP
0421   11300 073360        STA HD#
0422   11301 060220        LDA N5
0423   11302 073363        STA HCNTR
0424   11303 002400        CLA           SET REL SCTR# TO 0
0425   11304 073362        STA RSCTR
0426   11305 063354  LOOPH LDA N23       SET UP SCTR LOOP
0427   11306 073364        STA SCNTR
0428   11307 065055        LDB ALBUF
0429   11310 077365        STB PNTR
0430   11311 067361        LDB PTRK      GET CURREN TRK#
0431   11312 007000        CMB
0432   11313 054363        CPB LODSK     BOTTOM OF DISC?
0433   11314 027347        JMP ISSXT      =YES, EXIT
0434   11315 047357        ADB TRFLG     INCLUDE FLAG BIT
0435   11316 063364  LOOPS LDA SCNTR     SET UP HD/SCTR
0436   11317 040274        ADA P23
0437   11320 033360        IOR HD#
0438   11321 177365        STB PNTR,I
0439   11322 037365        ISZ PNTR
0440   11323 173365        STA PNTR,I
0441   11324 037365        ISZ PNTR
0442   11325 037364        ISZ SCNTR     BUFFER DONE?
0443   11326 027316        JMP LOOPS     =NO, SET NEXT SCTR
0444   11327 063361        LDA PTRK
0445   11330 003000        CMA
0446   11331 001727        ALF,ALF
0447   11332 033362        IOR RSCTR
```

```
1448  11333 065055         LDB ALBUF
1449  11334 014540         JSB DISKO      WRITE/INIT. 1 TRK
1450  11335 063362         LDA RSCTR
1451  11336 040274         ADA P23
1452  11337 073362         STA RSCTR
1453  11340 063360         LDA HD#        INCREMENT HEAD #
1454  11341 040305         ADA M400
1455  11342 073360         STA HD#
1456  11343 037363         ISZ HCNTR      DONE WITH CYLINDER?
1457  11344 027305         JMP LOOPH       -NO, GO DO NEXT TRK
1458  11345 037361         ISZ PTRK       DONE ALL CYLINDERS?
1459  11346 027277         JMP LOOPT       -NO, GO DO NEXT CYL
1460  11347 064345  ISSXT  LDB INWRT
1461  11350 074347         STB DWRT
1462  11351 064303         LDB .N128
1463  11352 074257         STB N128
1464  11353 127267         JMP ISSPR,I     -YES, EXIT.
1465*
1466  11354 177751  N23     DEC -23
1467  11355 177722  N46     DEC -46
1468  11356 070000  ISSIN   OCT 70000
1469  11357 000000  TRFLG   NOP
1470  11360 000000  HD#     NOP
1471  11361 000000  PTRK    NOP
1472  11362 000000  RSCTR   NOP
1473  11363 000000  HCNTR   NOP
1474  11364 000000  SCNTR   NOP
1475  11365 000000  PNTR    NOP
```

```
0477*
0478  11366          LST   BSS 0          LOADER SYMBOL TABLE



0480*
0481* THE FOLLOWING CODE HAS BEEN ADDED TO HANDLE A
0482*   MULTI-DRIVE 7900 CONTROLLER PROBLEM. A SEEK &
0483*   STATUS COMMAND IS ISSUED TO EACH DRIVE PRIOR
0484*   TO ANY OTHER DISC ACCESS
0485*
0486  11700                ORG 11700B
0487*
0488  11700 160176  CLEAR LDA ADVAD,I    SAVE
0489  11701 071323        STA TBUF         DVADR
0490  11702 063762        LDA STRT1      SET DVADR TO START OF DISC CON-
0491  11703 170176        STA ADVAD,I      FIGURABLE INSTRUCTIONS
0492  11704 067763        LDB END1       "B"=END OF CONFIG. INSTR.
0493  11705 114175        JSB ACNFG,I    CONFIGURE DISC I/O
0494  11706 061323        LDA TBUF       RESTORE ORIGINAL
0495  11707 170176        STA ADVAD,I      DVADR

0497  11710 060221        LDA N4         SET COUNTER FOR
0498  11711 071324        STA TBUF+1       4 DRIVES
0499  11712 002400        CLA            ISSUE STATUS COMMAND TO ALL
0500  11713 017751        JSB ST79         4 DRIVES TO CLEAR ALL
0501  11714 002004        INA              ATTENTION BITS
0502  11715 035324        ISZ TBUF+1
0503  11716 027713        JMP *-3

0505  11717 060221        LDA N4         SET COUNTER FOR
0506  11720 071324        STA TBUF+1       4 DRIVES
0507  11721 002400        CLA            ISSUE SEEK & STATUS COMMAND TO
0508  11722 017730        JSB S.S          ALL 4 DRIVES TO CLEAR ANY
0509  11723 002004        INA              SEEK CHECK STATUS BITS, THEN
0510  11724 035324        ISZ TBUF+1       CLEAR ATTENTION BITS
0511  11725 027722        JMP *-3
0512  11726 127727        JMP *+1,I      RETURN TO OUT3
0513  11727 012020        DEF OUT4         ROUTINE


0515*
0516* ROUTINE TO ISSUE A SEEK COMMAND FOLLOWED BY A
0517*   STATUS COMMAND. ON ENTRY
0518*              A = DRIVE #
0519*              B = TRACK # ; HEAD # (=0)
0520*
0521  11730 000000  S.S   NOP
0522  11731 006400        CLB              B=0 FOR TRACK # & HEAD #
0523  11732 106600        OTB 0            OUTPUT
0524  11733 103700        STC 0,C            TRACK #

0526  11734 106701        CLC 1            OUTPUT
0527  11735 030343        IOR SEEKX          SEEK + DRIVE #
0528  11736 102601        OTA 1
0529  11737 103701        STC 1,C
```

```
0531   11740 102300          SFS 0          WAIT FOR
0532   11741 027740          JMP *-1          DATA CHANNEL

0534   11742 106600          OTB 0          OUTPUT
0535   11743 103700          STC 0,C          HEAD #
0536   11744 102301          SFS 1
0537   11745 027744          JMP *-1

0539   11746 020343          XOR SEEKX      STRIP SEEK BITS FOR STATUS BITS
0540   11747 017751          JSB ST79       ISSUE STATUS COMMAND
0541   11750 127730          JMP S,S,I

0543   11751 000000  ST79    NOP
0544   11752 103700          STC 0,C
0545   11753 106701          CLC 1
0546   11754 102601          OTA 1
0547   11755 103701          STC 1,C
0548   11756 102300          SFS 0
0549   11757 027756          JMP *-1
0550   11760 106500          LIB 0
0551   11761 127751          JMP ST79,I


0553   11762 011730  STRT1   DEF S,S        START OF DISC I/O CONFIG. INSTR.
0554   11763 011763  END1    DEF *          END   OF DISC I/O
0555*
0556   12000                 ORG 12000B
0557*
0558   12000 000000  OUT3    NOP
0559   12001 062161          LDA ASCSY      IF INITIALIZING, SET UP LABEL
0560   12002 106501          LIB 1            FOR UNLABELLED, OTHERWISE,
0561   12003 006020          SSB              SET UP LABEL FOR SYSTEM
0562   12004 062162          LDA ASTY
0563   12005 073377          STA SYST
0564   12006 062163          LDA ASCLB
0565   12007 006020          SSB
0566   12010 002400          CLA
0567   12011 073374          STA LBDO
0568*
0569   12012 067373          LDB ALBL       COMPUTE CHECKSUM
0570   12013 014501          JSB CHKSM        OF SYSTEM LABEL
0571   12014 073433          STA CHSUM
0572*
0573   12015 060404          LDA NSPTK      IF 7900 DISC
0574   12016 050275          CPA P24          INITIALLY CLEAR ALL
0575   12017 126346          JMP ACLR,I       ATTENTION BITS
0576   12020 016203  OUT4    JSB PRTCT       INITIALIZE DISC
0577*
0578   12021 002400          CLA            DISC ADDRESS: 0,0
0579   12022 067373          LDB ALBL
0580   12023 114127          JSB ADOUT,I    OUTPUT DISC LABEL
0581*
0582   12024 060226          LDA P1         *
0583   12025 064145          LDB ABOOT      * OUTPUT
0584   12026 114127          JSB ADOUT,I    *   BOOTSTRAP
0585   12027 060227          LDA P2         *     TO
```

```
0586  12030 064146          LDB ABOOT+1    *   SECTORS 1,2 OF TRK# 0
0587  12031 114127          JSB ADOUT,I    *
0588*
0589  12032 126000          JMP OUT3,I
0590*
0591  12033           OUTXX EQU *
0592*
0593  13373                 ORG DBUF+6000B-1
0594*
0595  13373 013374  ALBL    DEF *+1
0596  13374 046102  LBDO    ASC 2,LBDO
0597  13376 000000  LCODE   BSS 1
0598  13377 051531  SYST    ASC 3,SYSTEM
0599  13402 000000          BSS 25
0600  13433 000000  CHSUM   BSS 1
0601*
0602  13434           XBUF1 EQU *
0603*
0604* THE FOLLOWING IS CODE FOR THE PRE-BOOT PROCESSOR.
0605* IT IS OUTPUT ON THE SYSTEM LABEL SECTOR (TRACK 0,
0606* SECTOR 0) AND READ IN BY THE CORE-RESIDENT DISC
0607* BOOT. THE PRE-BOOT THEN LOADS THE DISC-RESIDENT
0608* BOOT FROM TRACK 0, SECTORS 1 & 2 .
0609*
0610* NOTE: THIS CODE IS LOADED INTO CORE AT LOCATION
0611*       2051. EXECUTION BEGINS AT THE CONTENTS OF
0612*       LOCATION 2055.
0613*
0614  13434 015772          OCT 15772
0615  13435 015773          OCT 15773
0616  13436 015775          OCT 15775
0617  13437 015776          OCT 15776
0618*
0619  13440 002100          OCT 2100
0620*
0621  13441 000007          OCT 7
0622  13442 000003          OCT 3
0623  13443 177400          OCT 177400
0624  13444 015400          OCT 15400
0625  13445 115400          OCT 115400
0626  13446 030000          OCT 30000
0627*
0628  13447 000000  PBCHN   NOP            DISC I/O CHNL & DMACW SET PRIOR
0629  13450 000000  PBDMA   NOP              TO OUTPUTTING
0630*
0631  13451 010000  PBOVL   OCT 10000      THESE 10 WORDS CONTAIN READ &
0632  13452 020000          OCT 20000        STATUS MASKS, PLUS A ROUTINE
0633  13453 000000  D.HD    NOP              TO COMPUTE HEAD # & DRIVE #
0634  13454 000065          CLE,ERA          GIVEN THE SUBCHANNEL. THEY ARE
0635  13455 006600          CLB,CME          OVERLAYED BY AN ISS ROUTINE IF
0636  13456 005622          ELB,RBL          THE SYSTEM IS BEING GENERATED
0637  13457 126070          OCT 126070       FOR AN ISS DISC.
0638  13460 000000          BSS 3
0639*
0640  13463 102106          STF 6          EXECUTION BEGINS AT LOC 2100
0641  13464 102077          HLT 77B
```

```
0642   13465 107700          CLC 0,C
0643   13466 102501          LIA 1
0644   13467 012056          OCT 012056      AND .7
0645   13470 072300          OCT 072300      STA SUBCH
0646   13471 016070          OCT 016070      JSB D.HD
0647   13472 005727          BLF,BLF
0648   13473 026114          OCT 026114      JMP CONT
0649*
0650   13474 000400          OCT 400
0651   13475 000000          NOP
0652   13476 000312          OCT 312
0653*
0654   13477          XBUF2  EQU *
0655   13477 076301          OCT 76301       EXECUTION CONTINUES AT LOC 2114
0656   13500 072302          OCT 72302       STB HDMSK, STA DRV#
0657   13501 032063          OCT 32063       IOR SEEK
0658   13502 006400  PBC1    CLB             BEGIN DISC I/O CONFIG
0659   13503 106600          OTB 0
0660   13504 103700          STC 0,C
0661   13505 016175          OCT 16175       JSB CC.
0662   13506 066301          OCT 66301       LDB HDMSK
0663   13507 006004          INB
0664   13510 102300          SFS 0
0665   13511 026125          OCT 026125      JMP +-1
0666   13512 106600          OTB 0
0667   13513 103700          STC 0,C
0668   13514 066065          OCT 66065       LDB DMACW
0669   13515 106606          OTB 6
0670   13516 066062          OCT 66062       LDB MEMAD
0671   13517 106602          OTB 2
0672   13520 102702          STC 2
0673   13521 066060          OCT 66060       LDB N256
0674   13522 106602          OTB 2
0675   13523 022066          OCT 22066       XOR XORRD
0676   13524 103700          STC 0,C
0677   13525 103706          STC 6,C
0678   13526 016175          OCT 16175       JSB CC.
0679   13527 102301          SFS 1
0680   13530 026144          OCT 026144      JMP *-1
0681   13531 102106          STF 6
0682   13532 103700          STC 0,C
0683   13533 022067          OCT 22067       XOR XORST
0684   13534 016175          OCT 16175       JSB CC.
0685   13535 102300          SFS 0
0686   13536 026152          OCT 26152       JMP *-1
0687   13537 102500          LIA 0
0688   13540 001200          RAL
0689   13541 002020          SSA
0690   13542 026102          OCT 26102       JMP BACK
0691   13543 001310          RAR,SLA
0692   13544 026173          OCT 26173       JMP HLT11
0693   13545 062301          OCT 62301       LDA HDMSK
0694   13546 172051          OCT 172051      STA ABHDM,I
0695   13547 062302          OCT 062302      LDA DRV#
0696   13550 172054          OCT 172054      STA ABDRV,I
0697   13551 062300          OCT 062300      LDA SUBCH
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0698   13552 172053          OCT 172053     STA SYSC,I
0699   13553 062064          OCT 062064     LDA CHAN
0700   13554 172052          OCT 172052     STA ACHNL,I
0701   13555 126061          OCT 126061     DUMP DBOOT,I
0702   13556 102011          HLT 11B
0703   13557 026102          OCT 026102     JMP BACK
0704   13560 000000          NOP            CC. NOP
0705   13561 106701          CLC 1
0706   13562 102601          OTA 1
0707   13563 103701          STC 1,C
0708   13564 126175  PBC2    OCT 126175     END OF IDSC I/O CONFIG
0709*
0710   13565 000000          BSS XBUF2-*+60
0711*
0712   13573 052502          ASC 1,UB
0713*
0714   12033                 ORG OUTXX
0715*
0716   12033 000000  SETSC   NOP
0717   12034 071106          STA SYSCH      SET SYSTEM SUBCHANNEL
0718   12035 064404          LDB NSPTK
0719   12036 054274          CPB P23        ISS DISC?
0720   12037 026056          JMP STISS       -YES
0721   12040 174203          STB A#SCT,I    SET #SCTRS/TRK IN BOOTSTRAP
0722   12041 005000          BLS
0723   12042 074405          STB NSPCY      SET #SCTRS/CYL
0724   12043 044224          ADB N1
0725   12044 174204          STB A#SPC,I    SET #SCTRS/CYL-1 IN BOOTSTRAP
0001   12045 006004          INB
0002   12046 005100          BRS
0003   12047 007004          CMB,INB
0004   12050 074406          STB MSPTK      SET NEG #SCTRS/TRK
0005   12051 174205          STB A#STN,I    SET NEG #SCTRS/TRK IN BOOTSTRAP
0006   12052 000065          CLE,ERA        SUBCHNL DIV 2
0007   12053 006441          CLB,SEZ,RSS
0008   12054 064332          LDB B1000      SET IOMEC HEAD-MASK
0009   12055 026067          JMP STSC1
0010   12056 016076  STISS   JSB ISSIO      CHANGE DISC COMMANDS FOR ISS
0011   12057 072076          STA ISSIO      SAVE SYSTEM SUBCH
0012   12060 010230          AND P3         SUBCHNL MOD 4
0013   12061 070001          STA B          *
0014   12062 001222          RAL,RAL        * MULTIPLY BY 5
0015   12063 044000          ADB A          *
0016   12064 005727          BLF,BLF
0017   12065 062076          LDA ISSIO      GET SYSTEM SUBCH
0018   12066 001121          ARS,ARS        SUBCHNL DIV 4
0019   12067 071110  STSC1   STA DRV#       SET DRIVE#
0020   12070 070370          STA SVDRV
0021   12071 170206          STA ABDRV,I    SET DRIVE# IN BOOTSTRAP
0022   12072 075111          STB HDMSK      SET HEAD-MASK
0023   12073 074367          STB SVHDM
0024   12074 174207          STB ABHDM,I    SET HEAD-MASK IN BOOTSTRAP
0025   12075 126033          JMP SETSC,I
0026*
0027   12076 000000  ISSIO   NOP
0028   12077 006400          CLB
```

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0029  12100 074643          STB ALTSK
0030  12101 066156          LDB INST        SET UP ALF,ALF INSTRUCTION FOR
0031  12102 074757          STB ALTTR        POSITION,TRACK # OF ALT. TRACK
0032  12103 064342          LDB MSIGN
0033  12104 074344          STB CHCMD       ALTER CHECK DATA CMND
0034  12105 066153          LDB ISSWR       SET
0035  12106 074345          STB INWRT         ALL WRITE COMMANDS
0036  12107 074346          STB IPWRT           TO
0037  12110 074347          STB DWRT          'WRITE DATA'
0038  12111 066154          LDB ISSRD
0039  12112 074350          STB DREAD       ALTER READ CMND
0040  12113 176160          STB RDCMX,I     ALTER READ CMND IN BOOT
0041  12114 066155          LDB ISSRA
0042  12115 074351          STB RACMD       ALTER READ ADDRESS COMMAND
0043  12116 064331          LDB OPWRS+1
0044  12117 074352          STB STATC
0045  12120 176157          STB ASTAT,I
0046*
0047  12121 072203          STA PRTCT       SAVE A-REG
0048  12122 060213          LDA N10         MOVE 10-WORD CODE BUFFER FOR
0049  12123 072276          STA PRTRK         ISS INTO PRE-BOOT PROCESSOR
0050  12124 062140          LDA PBISS         BEFORE OUTPUTTING TO TRACK 0
0051  12125 072340          STA ADDR          SECTOR 0.
0052  12126 066137          LDB APBO
0053  12127 162340  LOOP    LDA ADDR,I
0054  12130 170001          STA 1,I
0055  12131 036340          ISZ ADDR
0056  12132 006004          INB
0057  12133 036276          ISZ PRTRK
0058  12134 026127          JMP LOOP
0059  12135 062203          LDA PRTCT       RESTORE A-REG
0060*
0061  12136 126076          JMP ISSIO,I
0062*
0063  12137 013451  APBO    DEF PBOVL       ADDRESS OF OVERLAY SECTION
0064  12140 012141  PBISS   DEF *+1
0065  12141 070000          OCT 70000       CODE FOR ISS
0066  12142 050000          OCT 50000
0067  12143 000000          NOP             D.HD NOP
0068  12144 012057          OCT 12057       AND .3
0069  12145 070001          STA B
0070  12146 001222          RAL,RAL
0071  12147 044000          ADB A
0072  12150 062300          OCT 62300       LDA SUBCH
0073  12151 001121          ARS,ARS
0074  12152 126070          OCT 126070      JMP D.HD,I
0075*
0076  12153 050000  ISSWR   OCT 050000
0077  12154 040000  ISSRD   OCT 040000
0078  12155 060000  ISSRA   OCT 060000
0079  12156 001727  INST    ALF,ALF
0080  12157 015761  ASTAT   DEF STCMD
0081  12160 015763  RDCMX   DEF RDCMD
0082  12161 051531  ASCSY   ASC 1,SY
0083  12162 025131  ASTY    ASC 1,*Y
0084  12163 046102  ASCLB   ASC 1,LB
```

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0085*
0086   12164 066202  INDSK LDB JMPIN
0087   12165 174164        STB ACHJM,I
0088   12166 016000        JSB OUT3
0089   12167 060226        LDA P1
0090   12170 064145        LDB ABOOT
0091   12171 014534        JSB DISKI
0092   12172 060227        LDA P2
0093   12173 064146        LDB ABOOT+1
0094   12174 014534        JSB DISKI
0095   12175 102007        HLT 7B
0096   12176 102501        LIA 1
0097   12177 002020        SSA
0098   12200 124125        JMP AGTSC,I
0099   12201 124112        JMP TRANS,I
0100*
0101   12202 124163  JMPIN JMP AIDSK,I
0102*
0103*
0104   12203 000000  PRTCT NOP
0105   12204 060371        LDA DSKAB      GET 1ST SYST TRK/SCTR
0106   12205 001727        ALF,ALF
0107   12206 010246        AND M377
0108   12207 040224        ADA N1
0109   12210 070363        STA LODSK      SET LOWER DISC BOUND
0110   12211 072335        STA LODX
0111   12212 160165        LDA AXIN,I
0112   12213 072341        STA TAXIN
0113   12214 062342        LDA LDE12
0114   12215 170165        STA AXIN,I
0115   12216 060404        LDA NSPTK      LOAD #SCTRS/TRK
0116   12217 050274        CPA P23        ISS DISC?
0117   12220 026314        JMP PTISS       -YES
0118   12221 001700        ALF            CONVERT TO
0119   12222 001222        RAL,RAL          WORDS/HALF TRACK
0120   12223 052345        CPA B3000
0121   12224 026232        JMP PSET
0122   12225 066343        LDB JMPV1
0123   12226 076253        STB PV1
0124   12227 066344        LDB JMPV2
0125   12230 076260        STB PV2
0126   12231 001200        RAL
0127   12232 003004  PSET  CMA,INA
0128   12233 070257        STA N128       STORE NEG #WORDS/TRK
0129   12234 060254        LDA N203
0130   12235 072336        STA ALTRK
0131*
0132   12236 060303        LDA .N128      MOVE 128 WORD SYSTEM LABEL
0133   12237 072276        STA PRTRK        BUFFER TO OUTPUT BUFFER -
0134   12240 063373        LDA ALBL         RIGHT BELOW TWO SECTORS
0135   12241 072340        STA ADDR         OF BOOTSTRAP
0136   12242 066347        LDB APBUF
0137   12243 162340  QLOOP LDA ADDR,I
0138   12244 170001        STA B,I
0139   12245 036340        ISZ ADDR
0140   12246 006004        INB
```

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0141   12247 036276          ISZ PRTRK
0142   12250 026243          JMP QLOOP
0143*
0144   12251 006400  PLOOP   CLB             SET SCTR# = 0
0145   12252 016276          JSB PRTRK       INIT 1ST HALF TOP TRACK
0146   12253 064404  PV1     LDB NSPTK       * * JMP PSKP1* FOR LOW DENSITY
0147   12254 005100          BRS
0148   12255 016276          JSB PRTRK       INIT 2ND HALF TOP TRACK
0149   12256 064404  PSKP1   LDB NSPTK
0150   12257 016276          JSB PRTRK       INIT 1ST HALF BOT TRACK
0151   12260 064404  PV2     LDB NSPTK       * *JMP PSKP2* FOR LOW DENSITY
0152   12261 074000          STB A
0153   12262 001100          ARS
0154   12263 044000          ADB A
0155   12264 016276          JSB PRTRK       INIT 2ND HALF BOT TRACK
0156   12265 036336  PRNXT   ISZ ALTRK
0157   12266 026251          JMP PLOOP       GO INIT. NEXT TRACK
0158   12267 060345  PRTXT   LDA INWRT
0159   12270 070347          STA DWRT        RESTORE WRITE COMMAND
0160   12271 062341          LDA TAXIN
0161   12272 170165          STA AXIN,I
0162   12273 060303          LDA .N128
0163   12274 070257          STA N128
0164   12275 126203          JMP PRTCT,I     EXIT
0165*
0166   12276 000000  PRTRK   NOP
0167   12277 062336          LDA ALTRK       LOAD NEG TRK# + 1
0168   12300 003000          CMA
0169   12301 050363          CPA LODSK       BOTTOM OF DISC?
0170   12302 026267          JMP PRTXT        -YES
0171   12303 001727          ALF,ALF         ROTATE TO HI 8 BITS
0172   12304 030001          IOR B           INCLUDE SECTOR#
0173   12305 072337          STA DSKTR
0174   12306 060246  M.V.    LDA M377
0175   12307 070356          STA LSTAC
0176   12310 066347          LDB APBUF
0177   12311 062337          LDA DSKTR
0178   12312 114127          JSB ADOUT,I
0179   12313 126276          JMP PRTRK,I
0180*
0181   12314 064342  PTISS   LDB MSIGN       GET FLAG BIT
0182   12315 102501          LIA 1
0183   12316 002020          SSA             INIT. DISC?
0184   12317 006400          CLB              -YES, DON'T SET FLAG BIT
0185   12320 060300          LDA P202
0186   12321 114167          JSB APTCT,I
0187   12322 102501          LIA 1
0188   12323 002020          SSA
0189   12324 026267          JMP PRTXT
0190   12325 002400          CLA
0191   12326 007400          CCB
0192   12327 074363          STB LODSK
0193   12330 064342          LDB MSIGN
0194   12331 114167          JSB APTCT,I
0195   12332 062335          LDA LODX
0196   12333 070363          STA LODSK
```

```
0197   12334 026267          JMP PRTXT
0198*
0199   12335 000000   LODX   NOP
0200   12336 000000   ALTRK  NOP
0201   12337 000000   DSKTR  NOP
0202   12340 000000   ADDR   NOP
0203   12341 000000   TAXIN  NOP
0204   12342 061250   LDE12  LDA  ERR12
0205   12343 026256   JMPV1  JMP  PSKP1
0206   12344 026265   JMPV2  JMP  PRNXT
0207   12345 003000   B3000  OCT  3000
0208   12346 011700   ACLR   DEF  CLEAR
0209   12347 015200   APBUF  DEF  OTBUF
0210   12350                 ORG  *
0211*
```

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0213  14000                ORG 14000B
0214*
0215  14000 000000 DSCHN  NOP
0216  14001 062066         LDA P19
0217  14002 066072         LDB MES40
0218  14003 114123         JSB AREPL,I    INPUT DISC SUBCHNL?
0219  14004 002404         CLA,INA
0220  14005 116067         JSB ADCON,I    CONVERT TO OCTAL
0221  14006 026001         JMP *-5         -NO INPUT - REPEAT QUESTION
0222  14007 051106         CPA SYSCH      INPUT SUBCHNL = SYSTEM SUBCHNL?
0223  14010 026001         JMP *-7         -YES, INVALID RESPONSE
0224  14011 064404         LDB NSPTK
0225  14012 054274         CPB P23        ISS DISC?
0226  14013 026020         JMP DRISS       -YES
0227  14014 000065         CLE,ERA        SET IOMEC DRIVE#
0228  14015 006441         CLB,SEZ,RSS    SET IOMEC
0229  14016 064332         LDB B1000        HEAD MASK
0230  14017 026030         JMP DRSC1
0231  14020 070365 DRISS   STA INHDM      SAVE SUBCHNL
0232  14021 010230         AND P3         *
0233  14022 070001         STA B          * COMPUTE
0234  14023 001222         RAL,RAL        *  ISS
0235  14024 044000         ADB A          * HEAD MASK
0236  14025 005727         BLF,BLF        *
0237  14026 060365         LDA INHDM
0238  14027 001121         ARS,ARS        ISS DRIVE# = SUBCHNL DIV 4
0239  14030 070366 DRSC1   STA INDRV      SET DISC INPUT DRIVE#
0240  14031 074365         STB INHDM      SET DISC INPUT HEAD MASK
0241  14032 060106         LDA LWAM       GET LWA MEM, SET BY DRIVERS
0242  14033 012063         AND B70K       ISOLATE CORE SIZE
0243  14034 032064         IOR B6000      SET FOR PAGE 0N6000
0244  14035 072062         STA DRPAG      SAVE NEW DRIVER PAGE
0245  14036 042065         ADA B110
0246  14037 070107         STA DRMAG      SET AS DRIVER ENTRY ADDRESS
0247  14040 040224         ADA N1
0248  14041 070106         STA LWAM       SET NEW LWA MEM,
0249  14042 062255         LDA ADIBF      GET INTERNAL BFR ADDRESS
0250  14043 010320         AND M1777      ISOLATE RELATIVE ADDRESS
0251  14044 032062         IOR DRPAG      INCLUDE PAGE MASK
0252  14045 072255         STA ADIBF
0253  14046 062256         LDA DIEND      GET DIBUF END ADDRESS
0254  14047 010320         AND M1777      ISOLATE RELATIVE ADDRESS
0255  14050 032062         IOR DRPAG      INCLUDE PAGE MASK
0256  14051 072256         STA DIEND
0257  14052 066070         LDB DRORG      GET DRIVER START ADDRESS
0258  14053 160001 DRAGN   LDA B,I        MOVE WORD
0259  14054 172062         STA DRPAG,I      TO NEW PAGE
0260  14055 036062         ISZ DRPAG
0261  14056 056071         CPB DREND      END OF DRIVER
0262  14057 126000         JMP DSCHN,I     -YES
0263  14060 006004         INB
0264  14061 026053         JMP DRAGN      GO RELOCATE NEXT WORD
0265  14062 000000 DRPAG   NOP
0266*
0267  14063 070000 B70K    OCT 070000
0268  14064 006000 B6000   OCT 6000
```

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0269  14065 000110  B110   OCT 110
0270  14066 000023  P19    DEC 19
0271*
0272  14067 003251  ADCON  DEF DOCON
0273  14070 014000  DRORG  OCT 14000
0274  14071 014262  DREND  DEF DIBUF
0275*
0276  14072 014073  MES40  DEF *+1
0277  14073 044516         ASC 10,INPUT DISC SUBCHNL?
0278*
0279*
0280  14110                ORG 14110B
0281*
0282  14110 000000  DRDSC  NOP
0283  14111 076246         STB AUBUF      SAVE DSGEN BUFFER ADDRESS
0284  14112 044277         ADB P128
0285  14113 076247         STB AUEND
0286  14114 166110         LDB DRDSC,I    GET REQUEST CODE
0287  14115 036110         ISZ DRDSC      INCREMENT RETURN ADDRESS
0288  14116 006002         SZB            REQUEST FOR READ?
0289  14117 026150         JMP DRIGN       -NO, IGNORE REQUEST
0290  14120 064364         LDB DEOF       GET DISC EOF FLAG
0291  14121 006003         SZB,RSS        IS THIS FIRST CALL?
0292  14122 026153         JMP DINIT       -YES, GO INITIALIZE
0293  14123 066250         LDB DPNTR      GET CURRENT DISC BFR POINTER
0294  14124 056256         CPB DIEND      END OF BUFFER?
0295  14125 016176  DRNXT  JSB NXSCT       -YES, GET NEXT SECTOR
0296  14126 160001         LDA B,I        GET CURRENT RECORD LENGTH
0297  14127 002003         SZA,RSS        ZERO?
0298  14130 026125         JMP DRNXT       -YES, GO GET NEXT SECTOR
0299  14131 001727         ALF,ALF        ROTATE TO LO 8 BITS
0300  14132 003004         CMA,INA
0301  14133 072251         STA DRECL      SET RECORD WORD COUNTER
0302  14134 062246  DLOOP  LDA AUBUF
0303  14135 052247         CPA AUEND      END OF REQ. BUFFER?
0304  14136 026147         JMP DRIGN-1     -YES, RETURN
0305  14137 160001         LDA B,I        GET NEXT WORD
0306  14140 172246         STA AUBUF,I      AND STORE
0307  14141 036246         ISZ AUBUF      INCREMENT DSGEN BUFFER POINTER
0308  14142 006004         INB            INCREMENT DISC BUFFER POINTER
0309  14143 056256         CPB DIEND      END OF BUFFER?
0310  14144 016176         JSB NXSCT       -YES, GET NEXT SECTOR
0311  14145 036251         ISZ DRECL      INCREMENT WORD COUNTER
0312  14146 026134         JMP DLOOP      GO TRANSFER NEXT WORD
0313  14147 076250         STB DPNTR      SAVE CURRENT BUFFER POINTER
0314  14150 036110  DRIGN  ISZ DRDSC      INCREMENT
0315  14151 036110         ISZ DRDSC        TO NORMAL RETURN
0316  14152 126110         JMP DRDSC,I      AND EXIT
0317*
0318  14153 002400  DINIT  CLA
0319  14154 016222         JSB DSCIN      READ TRK 0, SCTR 0
0320  14155 062257         LDA SY         *
0321  14156 052265         CPA DIBUF+3    *
0322  14157 066266         LDB DIBUF+4    * LABEL
0323  14160 056260         CPB SY+1       *  =
0324  14161 062267         LDA DIBUF+5    * SYSTEM?
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0325   14162 052261          CPA SY+2        *
0326   14163 026172          JMP DRSYS        =YES
0327   14164 002400          CLA
0328   14165 040305  DRSET    ADA M400        INCREMENT 1 TRACK
0329   14166 066362          LDB DIBUF+64    GET DISC EOF TRK/SCTR
0330   14167 074364          STB DEOF        SET DISC EOF TRK/SCTR
0331   14170 016222          JSB DSCIN       READ 1ST SECTOR
0332   14171 026126          JMP DRNXT+1     GO PROCESS 1ST RECORD
0333   14172 062362  DRSYS   LDA DIBUF+64    GET ADDRESS OF SYST BFR SCTR
0334   14173 016222          JSB DSCIN       READ SYST BFR SCTR
0335   14174 062252          LDA DICUR
0336   14175 026165          JMP DRSET       GO FINISH SETUP
0337*
0338   14176 000000  NXSCT   NOP
0339   14177 062252          LDA DICUR
0340   14200 001727          ALF,ALF
0341   14201 010246          AND M377        ISOLATE LAST INPUT TRACK#
0342   14202 072254          STA INLAC         AND SET AS LAST TRK ACCESSED
0343   14203 060356          LDA LSTAC       GET LAST TRACK ACCESSED
0344   14204 072253          STA SVLAC         AND SAVE
0345   14205 064366          LDB INDRV       GET INPUT DRIVE#
0346   14206 054370          CPB SVDRV       SAME AS SYSTEM DRIVE#?
0347   14207 072254          STA INLAC        =YES, RESET INPUT LAST ACCESS
0348   14210 062252          LDA DICUR       GET CURRENT DISC ADDRESS
0349   14211 014513          JSB DISKA         AND INCREMENT
0350   14212 050364          CPA DEOF        END-OF-FILE?
0351   14213 026217          JMP DEOFX        =YES
0352   14214 016222          JSB DSCIN        =NO, READ NEXT SECTOR
0353   14215 066255          LDB ADIBF       SET POINTER TO START OF DIBUF
0354   14216 126176          JMP NXSCT,I
0355*
0356   14217 002400  DEOFX    CLA             CLEAR DISC EOF FLAG
0357   14220 070364          STA DEOF          TO ALLOW ANOTHER DISC
0358   14221 126110          JMP DRDSC,I     EXIT TO EOF EXIT
0359*
0360   14222 000000  DSCIN    NOP
0361   14223 072252          STA DICUR       UPDATE CURRENT DISC ADDRESS
0362   14224 066254          LDB INLAC       SET LAST INPUT ACCESS
0363   14225 074356          STB LSTAC         AS LAST TRACK ACCESSED
0364   14226 064365          LDB INHDM
0365   14227 075111          STB HDMSK       SET DISC INPUT HEAD MASK
0366   14230 064366          LDB INDRV
0367   14231 075110          STB DRV#        SET DISC INPUT DRIVE#
0368   14232 066255          LDB ADIBF
0369   14233 014534          JSB DISKI       READ DISC INTO DIBUF
0370   14234 064367          LDB SVHDM
0371   14235 075111          STB HDMSK       RESTORE HEAD MASK
0372   14236 064370          LDB SVDRV
0373   14237 075110          STB DRV#        RESTORE DRIVE#
0374   14240 062253          LDA SVLAC       GET SAVED LAST TRK ACCESSED
0375   14241 054366          CPB INDRV       INPUT DRV# = SYSTEM DRV#?
0376   14242 002001          RSS              =YES, DON'T CHANGE LAST ACCESS
0377   14243 070356          STA LSTAC        =NO, RESET TO SAVED VALUE
0378   14244 066255          LDB ADIBF
0379   14245 126222          JMP DSCIN,I
0380*
```

```
0381   14246 000000  AUBUF NOP
0382   14247 000000  AUEND NOP
0383   14250 000000  DPNTR NOP
0384   14251 000000  DRECL NOP
0385   14252 000000  DICUR NOP
0386   14253 000000  SVLAC NOP
0387   14254 000313  INLAC DEC 203
0388   14255 014262  ADIBF DEF DIBUF
0389   14256 014462  DIEND DEF DIBUF+128
0390   14257 051531  SY    ASC 3,SYSTEM
0391*
0392   14262 000000  DIBUF BSS 128
0393   14462               ORG *


0395*  BUFFER TO HOLD SYSTEM LABEL SECTOR WHILE OUTPUT-
0396*    TING THREE SECTORS TO INITIALIZE IOMEC/7900
0397*    DISCS

0399   15200               ORG 15200B
0400   15200 000000  OTBUF BSS 128
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```
0402  15400                ORG 15400B
0403*
0404*  THE FOLLOWING LOADER PERMITS LOADING OF THE RESIDENT PORTIONS
0405*  OF THE DISC MONITOR SYSTEM. THE LOADER IS LOCATED ON SECTOR 2,
0406*  TRACK 0 OF THE SYSTEM DISC.  IT IS GENERATED BY THE SYSTEM
0407*  GENERATOR AND CONSISTS OF:
0408*
0409*  (1) THE INSTRUCTIONS REQUIRED FOR LOADING THE SYSTEM
0410*  (2) THE DISK AND CORE ADDRESSES SPECIFYING LOADING
0411*
0412*
0413*  THE ADDRESSES REQUIRED FOR LOADING ARE THE FOLLOWING:
0414*
0415*  (A) BASE PAGE LINKAGES
0416*     (1) LOW CORE ADDRESS
0417*     (2) HIGH CORE ADDRESS
0418*     (3) DISK ADDRESS OF ABSOLUTE CODE
0419*
0420*  (B) SYSTEM, RT RESIDENT MAIN
0421*     (1) LOW CORE ADDRESS
0422*     (2) HIGH CORE ADDRESS
0423*     (3) DISK ADDRESS OF ABSOLUTE CODE
0424*
0425*
0426*  THE PROGRAM IS ASSUMED TO BE LOADED IN THE 128 WORDS PRECEEDING
0427*  THE PROTECTED LOADER.
0428*
0429  15400 067773  START LDB DCHAN
0430  15401 077747        STB CHANL
0431  15402 067725        LDB DEFDY
0432  15403 017562        JSB CNFGR      CONFG. BOOTSTRAP I/O INSTR.
0433  15404 063726        LDA ASPBF      GET ADDRS CONTAINING RELOC. PAGE
0434  15405 013763        AND M76K       ISOLATE PAGE
0435  15406 070001        STA B          SAVE RELOCATION PAGE
0436  15407 063724        LDA DVADR
0437  15410 013753        AND M76K
0438  15411 050001        CPA B          BOOTSTRAP ALREADY RELOCATED?
0439  15412 027437        JMP RELBT       -YES
0440  15413 047755        ADB N2KB        -NO, MOVE DOWN 1 PAGE
0441  15414 077746        STB PGMSK
0442  15415 063726        LDA ASPBF
0443  15416 013754        AND B1777
0444  15417 033746        IOR PGMSK
0445  15420 073726        STA ASPBF      RELOCATE SPEC. BFR ADDRS
0446  15421 063723        LDA RELDF
0447  15422 013754       AND B1777
0448  15423 033746        IOR PGMSK
0449  15424 073723        STA RELDF      RELOCATE TRANSFER ADDRESS
0450  15425 063722        LDA DFORG
0451  15426 013754        AND B1777
0452  15427 033746        IOR PGMSK
0453*
0454  15430 167722  MVMOR LDB DFORG,I    *
0455  15431 174000        STB A,I        *
0456  15432 002004        INA            *  RELOCATE
0457  15433 037722        ISZ DFORG      *
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0458  15434 037752          ISZ N,256       *  BOOTSTRAP
0459  15435 027430          JMP MVMOR       *
0460*
0461  15436 127723          JMP RELDF,I     TRANSFER TO RELOCATED BOOTSTRAP
0462*
0463  15437 017600  RELBT   JSB PLOAD       LOAD BASE PAGE
0464  15440 017600          JSB PLOAD       LOAD MAIN SYSTEM
0465  15441 063751          LDA .119        * SIMULATE
0466  15442 073760          STA P,128       *   119-WORD
0467  15443 003004          CMA,INA         *   SECTOR SIZE
0468  15444 073757          STA N,128       *   FOR I/O TABLES
0469  15445 017600          JSB PLOAD       LOAD I/O TABLES
0470  15446 063750          LDA .128        * RESET
0471  15447 073760          STA P,128       *   SECTOR SIZE
0472  15450 003004          CMA,INA         *    TO
0473  15451 073757          STA N,128       *   128 WORDS
0474  15452 017600          JSB PLOAD       LOAD EXEC DOUBLETS
0475*
0476  15453 064120          LDB BEQT#       GET # OF EQUIPMENT
0477  15454 007004          CMB,INB           TABLE ENTRIES AND
0478  15455 077774          STB CNTR          STORE NEGATIVE
0479  15456 064117          LDB BEQTB       GET FWA OF EQUIPMENT TABLE
0480  15457 044055  CNFG1   ADB .2
0481  15460 160001          LDA B,I
0482  15461 044051          ADB .2N
0483  15462 010072          AND M,77
0484  15463 073747          STA CHANL       SAVE I/O CHANNEL#
0485  15464 077400          STB EQADR       SAVE CURRENT EQPMT TABLE ADDRESS
0486  15465 044056          ADB .3
0487  15466 160001          LDA B,I
0488  15467 001727          ALF,ALF
0489  15470 013756          AND M,377
0490  15471 073401          STA EQPCD       SAVE EQPT TYPE CODE
0491  15472 050060          CPA .5           =SYSTEM TELETYPE?
0492  15473 027512          JMP CNFG4         =YES
0493  15474 053766          CPA DISK         =DISC
0494  15475 027503          JMP CNFG3         =YES
0495  15476 067400  CNFG2   LDB EQADR
0496  15477 044066          ADB .17D        INCR TO NEXT EQPMT TABLE ENTRY
0497  15500 037774          ISZ CNTR        CHECKED ALL ENTRIES?
0498  15501 027457          JMP CNFG1         =NO
0499  15502 027535          JMP CNFG7         =YES
0500  15503 044052  CNFG3   ADB .1N         SET NEW DISC I/O CHANNEL
0501  15504 160001          LDA B,I           IN EQT ENTRY
0502  15505 023747          XOR CHANL
0503  15506 033773          IOR DCHAN
0504  15507 170001          STA B,I
0505  15510 063773          LDA DCHAN       SET NEW DISC I/O CHANNEL FOR
0506  15511 073747          STA CHANL         CONFIGURATION ROUTINE
0507  15512 067400  CNFG4   LDB EQADR
0508  15513 160001          LDA B,I
0509  15514 073724          STA DVADR       SAVE DRIVER ENTRY POINT
0510  15515 164000          LDB A,I         GET CONFIGURATION STOP POINT
0511  15516 017562          JSB CNFGR
0512*
0513  15517 063401          LDA EQPCD       GET EQPMT TYPE CODE
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0514  15520 050060          CPA .5          *SYSTEM TELETYPE?
0515  15521 027476          JMP CNFG2       -YES
0516  15522 006004          INB             -NO, MUST BE DISC
0517  15523 160001          LDA B,I
0518  15524 033747          IOR CHANL       CONFIGURE DMA CNTRL WORD
0519  15525 170001          STA B,I           AND STORE
0520  15526 006004          INB
0521  15527 063743          LDA #SPTK       * SET + AND -
0522  15530 170001          STA B,I         *  SECTORS/TRACK
0523  15531 006004          INB             *    IN
0524  15532 003004          CMA,INA         *  DISC DRIVER
0525  15533 170001          STA B,I         *
0526  15534 027476          JMP CNFG2
0527*
0528  15535 060154  CNFG7 LDA BDSCO        *
0529*
0530  15536 001722          ALF,RAL         *
0531  15537 013770          AND M,740       * SET RUN TIME
0532  15540 033773          IOR DCHAN       *   DISC CHANNEL
0533  15541 001727          ALF,ALF         *   IN *DISCO*
0534  15542 001723          ALF,RAR         *
0535  15543 070154          STA BDSCO       *
0536*
0537*
0538  15544 063775          LDA RSYSC
0539  15545 064155          LDB BSYSC
0540  15546 070155          STA BSYSC       SET RUN TIME SYS SUBCHNL
0541  15547 054175          CPB BUDSC
0542  15550 070175          STA BUDSC
0543  15551 006400          CLB
0544  15552 050175          CPA BUDSC       SYS SC = USER SC?
0545  15553 064115          LDB BSYBF        -YES,
0546  15554 074200          STB BDSCL          SET DISCL
0547  15555 047764          ADB .400
0548  15556 074157          STB BUNTS         = SYSTEM NEXT TRK/SCTR
0549  15557 064175          LDB BUDSC
0550  15560 074161          STB BCDSC
0551*
0552  15561 124003          JMP 3B,I        GO START DOS
0553*
0554  15562 000000  CNFGR NOP
0555  15563 057724          CPB DVADR       DONE CONFIGURING THIS DRIVER?
0556  15564 127562          JMP CNFGR,I      -YES
0557  15565 037724          ISZ DVADR        -NO, INCR TO NEXT INSTRUCTION
0558  15566 163724          LDA DVADR,I     LOAD INSTRUCTION
0559  15567 002021          SSA,RSS         *
0560  15570 027563          JMP CNFGR+1     * CHECK IF INSTRUCTION
0561  15571 013767          AND MASK        *   IS I/O
0562  15572 002002          SZA             *   FOR DEVICE (EXCLUDING DMA)
0563  15573 027563          JMP CNFGR+1     *
0564  15574 163724          LDA DVADR,I      -YES,
0565  15575 043747          ADA CHANL          CONFIGURE INSTRUCTION
0566  15576 173724          STA DVADR,I        AND STORE
0567  15577 027563          JMP CNFGR+1
0568*
0569  15600 000000  PLOAD NOP
```

```
0570   15601 167726          LDB SPCAD,I    GET LOW CORE ADDRESS
0571   15602 037726          ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0572   15603 163726          LDA SPCAD,I    GET HIGH CORE ADDRESS
0573   15604 037726          ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0574   15605 003304          CMA,CCE,INA    COMPLEMENT, SET DIRECTION BIT
0575   15606 040001          ADA B          SET A = TOTAL WORD COUNT
0576   15607 005225          RBL,ERB        SET DIRECTION BIT IN CORE ADDR
0577   15610 106702          CLC 2
0578   15611 106602          OTB 2          SET MEMORY ADDRESS REGISTER
0579   15612 167726          LDB SPCAD,I    GET DISK ADDRESS OF ABSOLUTE COD
0580   15613 037726          ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0581*
0582   15614 002021  SLOAD   SSA,RSS        SKIP - MORE SECTORS TO LOAD
0583   15615 127600          JMP PLOAD,I    RETURN - THIS SECTION LOADED
0584   15616 043760          ADA P.128      ADJUST FOR NEXT COUNT
0585   15617 073765          STA RECNT      SET REMAINING COUNT
0586   15620 002020          SSA            SKIP - LESS THAN 128 WORDS
0587   15621 002400          CLA
0588   15622 043757          ADA N.128      SET A = CURRENT SECTOR COUNT
0589   15623 102702          STC 2
0590   15624 102602          OTA 2          SET WORD COUNT REGISTER
0591   15625 060001          LDA B          LOAD CURRENT DISK ADRS INTO A,
0592   15626 001767          ALF,CLE,ALF      ROTATE TO LO BITS,
0593   15627 013756          AND M.377        AND ISOLATE TRK#
0594   15630 102600  DSKA    OTA 0          OUTPUT TRK#
0595   15631 103700          STC 0,C          TO DATA CHANNEL
0596   15632 063762          LDA SKCMD      LOAD SEEK COMMAND
0597   15633 033776          IOR BDRV#      INCLUDE DRIVE #
0598   15634 106701          CLC 1
0599   15635 102601          OTA 1          OUTPUT SEEK/ADDRESS CMND
0600   15636 103701          STC 1,C          TO COMMAND CHANNEL
0601   15637 102300          SFS 0          CHECK DATA CHNL FLAG,
0602   15640 027637          JMP *-1          LOOP UNTIL SET
0603   15641 060001          LDA B          LOAD CURRENT DISK ADDRESS INTO A
0604   15642 077400          STB EQADR      SAVE CURRENT DISC ADDRESS
0605   15643 013756          AND M.377        ISOLATE SECTOR#
0606   15644 006401          CLB,RSS        *
0607   15645 006004          INB            * CONVERT
0608   15646 043745          ADA #SPTN      *
0609   15647 002021          SSA,RSS        *   LOGICAL SCTR#
0610   15650 027645          JMP *+3        *
0611   15651 043743          ADA #SPTK      *     TO
0612   15652 005727          BLF,BLF        *
0613   15653 047772          ADB BHMSK      *   PHYSICAL HD/SCTR
0614   15654 030001          IOR B          *
0615   15655 102600          OTA 0          OUTPUT HEAD/SECTOR
0616   15656 103700          STC 0,C          TO DATA CHANNEL
0617   15657 102301          SFS 1          CHECK CMND CHNL FLAG,
0618   15660 027657          JMP *-1          WAIT UNTIL SET
0619   15661 063763          LDA RDCMD      LOAD READ COMMAND
0620   15662 033776          IOR BDRV#      INCLUDE DRIVE#
0621   15663 102601          OTA 1          OUTPUT COMMAND
0622   15664 103700          STC 0,C
0623   15665 106701          CLC 1
0624   15666 103706          STC 6,C        INITIATE DMA
0625   15667 103701          STC 1,C        INITIATE DATA TRANSFER
```

```
0626  15670 102301         SFS 1          CHECK CMND CHNL FLAG,
0627  15671 027670         JMP *-1          WAIT UNTIL SET
0628  15672 017705         JSB BSTAT
0629  15673 063400         LDA EQADR      GET DISC ADDRESS
0630  15674 013756         AND M,377        AND ISOLATE
0631  15675 070001         STA B          SAVE SECTOR#
0632  15676 023400         XOR EQADR      ISOLATE TRACK#
0633  15677 057744         CPB #SPCY      END OF CYLINDER?
0634  15700 067756         LDB M,377       -YES
0635  15701 006004         INB            INCREMENT TO NEXT SECTOR
0636  15702 044000         ADB A          INCR TO NEXT DISC ADDRESS
0637  15703 063765         LDA RECNT      GET REMAINING COUNT
0638  15704 027614         JMP BLOAD      LOAD NEXT CYLINDER
0639*
0640  15705 000000  BSTAT  NOP
0641  15706 103700         STC 0,C
0642  15707 063776         LDA BDRV#
0643  15710 033761         IOR STCMD
0644  15711 106701         CLC 1
0645  15712 102601         OTA 1
0646  15713 103701         STC 1,C
0647  15714 102300         SFS 0
0648  15715 027714         JMP *-1
0649  15716 102500  DSKY   LIA 0
0650  15717 000010         SLA
0651  15720 102031         HLT 31B
0652  15721 127705         JMP BSTAT,I
0653*                                   DATA AREA
0654*
0655  15722 015400  DFORG  DEF START
0656  15723 015437  RELDF  DEF RELBT
0657  15724 015627  DVADR  DEF DSKA-1
0658  15725 015716  DEFDY  DEF DSKY
0659*
0660  15726 015727  ASPBF  DEF *+1
0661  15727 000000         BSS 12
0662  15726          SPCAD  EQU ASPBF
0663*
0664  15743 000027  #SPTK  DEC 23         #SCTRS/TRK
0665  15744 000162  #SPCY  DEC 114        #SCTRS/CLY - 1
0666  15745 177751  #SPTN  DEC -23        NEG #SCTRS/TRK
0667  15746 000000  PGMSK  NOP
0668  15747 000000  CHANL  NOP
0669  15750 000200  .128   DEC 128
0670  15751 000167  .119   DEC 119
0671  15752 177400  N.256  DEC -256
0672  15753 076000  M76K   OCT 76000
0673  15754 001777  B1777  OCT 1777
0674  15755 176000  N2KB   OCT -2000
0675  15756 000377  M.377  OCT 377
0676  15757 177600  N.128  DEC -128
0677  15760 000200  P.128  DEC 128
0678  15761 000000  STCMD  NOP
0679  15762 030000  SKCMD  OCT 030000     SEEK COMMAND
0680  15763 020000  RDCMD  OCT 020000     READ COMMAND
0681  15764 000400  .400   OCT 400        LOWER HEAD# BIT
```

```
0682   15765 000000   RECNT OCT 0          CURRENT REMAINING COUNT
0683   15766 000031   DISK  OCT 31
0684   15767 070036   MASK  OCT 070036
0685   15770 177740   M.740 OCT 177740
0686*
0687   00053          #     EQU 53B
0688   00045          .6N   EQU #-6
0689   00051          .2N   EQU #-2
0690   00052          .1N   EQU #-1
0691   00055          .2    EQU #+2
0692   00056          .3    EQU #+3
0693   00060          .5    EQU #+6
0694   00066          .17D  EQU #+11
0695   00071          M.37  EQU #+14
0696   00072          M.77  EQU #+15
0697*
0698   00100          *     EQU 100B
0699   00115          BSYBF EQU *+13
0700   00117          BEQTB EQU *+15
0701   00120          BEQT# EQU *+16
0702   00154          BDSCO EQU *+44
0703   00155          BSYSC EQU *+45
0704   00157          BUNTS EQU *+47
0705   00161          BCDSC EQU *+49
0706   00175          BUDSC EQU *+61
0707   00200          BDSCL EQU *+64
0708*
0709   15400          EQADR EQU START     TWO TEMPORARY STORAGES WRITE
0710   15401          EQPCD EQU START+1     OVER 1ST 2 WORDS OF BOOTSTRAP
0711*
0712* THE FOLLOWING 4 LOCATIONS ARE SET BY THE CORE
0713*  RESIDENT DOS-M BOOTSTRAP.
0714*
0715   15772                ORG 15772B
0716   15772 000000   BHMSK NOP
0717   15773 000000   DCHAN NOP
0718   15774 000000   CNTR  NOP
0719   15775 000000   RSYSC NOP
0720   15776 000000   BDRV# NOP
0721*
0722   15777 177727   END   ABS ASPBF-*
0723*
0724                        END
**  NO ERRORS*
```

```
 #       00687/12 00688/12 00689/12 00690/12 00691/12 00692/12 00693/12
         00694/12 00695/12 00696/12

 #SPCY   00665/12 00204/02 00633/12

 #SPTK   00664/12 00203/02 00521/12 00611/12

 #SPTN   00666/12 00205/02 00608/12

#$GOPT   00072/04

#$IDCD   00073/04

#$MDBF   00074/04

 $SECT   00568/03 00322/09

#$TEMP   00076/04

 **ORG   ******** 00002/02 00494/03 00546/03 00097/04 00100/04 00057/06
         00058/06 00062/06 00064/06 00032/08 00665/09 00667/09 00486/11
         00556/11 00593/11 00714/11 00210/12 00213/12 00280/12 00393/12
         00399/12 00402/12 00715/12

 .       00550/03 00202/02 00552/03 00554/03 00555/03 00557/03 00558/03
         00559/03 00560/03 00562/03 00563/03 00564/03 00565/03 00567/03
         00568/03 00570/03 00571/03 00573/03 00574/03 00576/03 00577/03
         00578/03 00580/03 00582/03 00584/03 00585/03 00586/03 00587/03
         00588/03 00589/03 00591/03 00592/03 00593/03 00594/03 00595/03
         00596/03 00597/03 00598/03 00001/04 00002/04 00003/04 00004/04
         00005/04 00007/04 00008/04 00009/04 00010/04 00011/04 00012/04
         00013/04 00014/04 00015/04 00016/04 00017/04 00018/04 00019/04
         00020/04 00021/04 00022/04 00023/04 00025/04 00026/04 00028/04
         00029/04 00030/04 00031/04 00032/04 00033/04 00034/04 00035/04
         00037/04 00039/04 00040/04 00041/04 00042/04 00044/04 00045/04
         00046/04 00047/04 00048/04 00050/04 00051/04 00053/04 00054/04
         00055/04 00057/04 00059/04 00060/04 00062/04 00064/04 00065/04
         00066/04 00067/04 00069/04 00070/04 00072/04 00073/04 00074/04
         00076/04 00077/04 00078/04 00079/04 00080/04 00081/04 00082/04
         00083/04 00084/04 00085/04 00086/04 00087/04 00088/04 00089/04
         00090/04 00091/04 00092/04 00093/04 00094/04 00095/04 00096/04

 .119    00670/12 00465/12

 .128    00669/12 00470/12

 .17D    00694/12 00496/12

 .1N     00690/12 00500/12

 .2      00691/12 00480/12

 .2N     00689/12 00482/12

 .3      00692/12 00486/12
```

.400 00681/12 00547/12

.5 00693/12 00491/12 00514/12

*.6N 00688/12

.FNXT 00482/08 00508/08

.N128 00275/02 00536/05 00514/07 00561/09 00462/11 00132/12 00162/12

* 00698/12 00699/12 00700/12 00701/12 00702/12 00703/12 00704/12
00705/12 00706/12 00707/12

A 00133/02 00059/03 00354/03 00566/04 00573/04 00411/06 00432/06
00241/07 00242/07 00246/07 00326/07 00329/07 00298/08 00383/08
00391/08 00537/08 00560/08 00590/08 00598/08 00632/08 00170/09
00250/09 00253/09 00593/09 00307/10 00344/10 00555/10 00108/11
00015/12 00071/12 00162/12 00154/12 00235/12 00458/12 00510/12
00636/12

A#SCT 00203/02 00721/11

A#SPC 00204/02 00725/11

A#STN 00205/02 00005/12

AALOC 00170/02 00457/10 00088/11

ABCNT 00232/03 00321/11 00322/11

ABDRV 00206/02 00021/12

ABERR 00020/08 00015/08

ABHDM 00207/02 00024/12

ABOOT 00173/02 00433/09 00583/11 00586/11 00090/12 00093/12

ABPOT 00162/02 00249/08 00397/08 00604/08 00072/09 00108/09 00120/09
00424/09

ABSID 00640/09 00099/09 00116/09

ACHJM 00188/02 00087/12

ACHNL 00200/02 00180/04

ACLR 00208/12 00575/11

ACLRT 00163/02 00400/08 00607/08 00111/09 00131/09

ACNFG 00197/02 00381/04 00385/04 00493/11

ADBUF 00159/03 00307/05 00321/05 00230/08 00177/09 00180/09 00259/09
00452/09 00457/09 00473/09 00474/09 00484/09 00398/11 00400/11

ADCHK 00219/03 00476/09

ADCHN 00199/02 00373/04

ADCON 00272/12 00220/12

ADDR 00202/12 00051/12 00053/12 00055/12 00135/12 00137/12 00139/12

ADFSC 00466/05 00463/05

ADIBF 00388/12 00249/12 00252/12 00353/12 00368/12 00378/12

ADLBL 00218/03 00469/09

ADOUT 00159/02 00075/03 00553/04 00106/05 00308/05 00192/06 00257/06
00504/08 00584/08 00147/09 00181/09 00212/09 00458/09 00485/09
00560/09 00131/10 00580/11 00584/11 00587/11 00178/12

ADVAD 00198/02 00376/04 00379/04 00383/04 00387/04 00488/11 00491/11
00495/11

AEQT 00347/02 00268/06 00481/07 00269/09

AFWAP 00158/02 00194/06 00196/06 00080/07

AGEND 00167/02 00376/08 00517/08 00054/09 00104/09

AGETA 00151/02 00425/03 00377/05 00425/05 00160/08

AGETN 00152/02 00424/03 00424/05

AGETO 00153/02 00375/05 00351/07 00158/08

AGINI 00154/02 00351/05 00349/07 00156/08

AGNIO 00150/02 00309/08

AGTSC 00157/02 00098/12

AIBUF 00160/03 00422/04 00334/08 00211/09 00267/11 00269/11

AIDSK 00187/02 00390/04 00101/12

AIDSN 00164/02 00261/08 00323/08 00357/08 00448/08 00021/09

AINBD 00499/09 00629/08 00654/08

AINER 00156/02 00428/03

AINPT 00147/02 00403/04

AINT 00353/02 00546/06 00087/07 00281/09

ALABD 00165/02 00513/07

ALBL 00595/11 00569/11 00579/11 00134/12

ALBUF 00158/03 00464/04 00470/04 00477/04 00510/04 00552/04 00591/04
00606/04 00105/05 00121/05 00258/05 00344/05 00347/05 00089/06
00092/06 00158/06 00279/06 00282/06 00497/06 00500/06 00034/07
00037/07 00273/07 00342/07 00345/07 00146/08 00149/08 00146/11
00428/11 00448/11

ALCD 00208/02 00169/04

ALLOC 00322/07 00170/02 00333/07 00338/07 00341/07 00353/07

ALOAD 00160/02 00267/08 00375/08 00516/08 00063/09

ALODS 00161/02 00102/09

ALTRK 00200/12 00130/12 00156/12 00167/12

ALTSK 00638/02 00029/12

ALTTR 00060/03 00031/12

AMAD 00502/03 00159/10 00163/10 00215/10 00218/10 00220/10 00221/10
00223/10 00224/10 00228/10

AMEM5 00164/03 00264/10 00445/10

AMERR 00438/02 00425/02 00427/02

AMLST 00163/03 00157/10 00214/10 00267/10 00448/10

AMS17 00179/02 00144/08

AMS32 00180/02 00047/03

AMS36 00181/02 00626/08

ANDBL 00145/02 00099/05

ANOTS 00169/02 00273/08 00414/08 00610/08 00139/09

AOUT3 00190/02 00399/04

AOUTD 00168/02 00195/09 00197/09 00199/09 00201/09 00203/09 00207/09

APARS 00149/02 00211/06

APBC 00192/02 00374/04

APBC1 00194/02 00382/04

APBC2 00195/02 00384/04

APBD 00193/02 00370/04

APBO 00063/12 00052/12

APBUF 00209/12 00136/12 00176/12

APTCT 00191/02 00467/09 00186/12 00194/12

AREMD 00166/02 00094/07 00302/08 00394/08 00601/08 00055/09 00105/09

AREPL 00155/02 00422/03 00218/12

ARESC 00178/02 00371/08

ASBUF 00175/02 00394/04 00397/04 00435/09

ASCBP 00171/02 00078/11 00082/11 00086/11

ASCEX 00321/02 00485/05 00360/08

ASCLB 00084/12 00564/11

ASCOT 00172/02 00597/09

ASCSB 00284/03 00470/09

ASCSY 00082/12 00559/11

ASCX3 00322/02 00488/05

ASECT 00601/09 00439/09

ASFLG 00645/09 00020/09 00047/09 00056/09 00067/09

ASJOB 00648/09 00035/09 00039/09 00044/09

ASPBF 00660/12 00175/02 00433/12 00442/12 00446/12 00662/12 00722/12

ASQT 00350/02 00471/06 00275/09

ASTAT 00080/12 00045/12

ASTSC 00196/02 00259/04 00273/04

ASTY 00083/12 00562/11

ASTYP 00416/07 00329/06 00401/06 00422/06

ATBUF 00161/03 00483/06 00168/07 00309/11 00317/11

AUBUF 00381/12 00283/12 00302/12 00306/12 00307/12

AUEND 00382/12 00285/12 00303/12

AXIN 00189/02 00111/12 00114/12 00161/12

B 00134/02 00390/02 00453/02 00482/02 00486/02 00488/02 00490/02
00654/02 00062/03 00066/03 00105/03 00234/04 00299/04 00512/04
00574/04 00584/04 00141/06 00489/06 00492/06 00027/07 00295/07

00297/07 00298/07 00004/08 00204/08 00294/08 00299/08 00345/08
00366/08 00370/08 00488/08 00564/08 00567/08 00570/08 00573/08
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00097/10 00103/10 00124/10 00161/10 00249/10 00255/10 00341/10
00352/10 00380/10 00387/10 00487/10 00506/10 00510/10 00516/10
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00069/12 00138/12 00172/12 00233/12 00258/12 00296/12 00305/12
00435/12 00438/12 00481/12 00487/12 00501/12 00504/12 00508/12
00517/12 00519/12 00522/12 00525/12 00575/12 00591/12 00603/12
00614/12 00631/12

B1000 00299/02 00008/12 00229/12

B110 00269/12 00245/12

B1777 00673/12 00443/12 00447/12 00451/12

B3000 00207/12 00120/12

B6000 00268/12 00243/12

B70K 00267/12 00242/12

BACK 00021/07 00030/07

BATCH 00562/03 00300/09

BCDSC 00705/12 00550/12

BDEND 00139/09 00022/09

BDLD 00021/09 00024/09 00027/09 00137/09

BDLD5 00053/09 00037/09 00041/09 00046/09

BDLD8 00068/09 00058/09

BDRV# 00720/12 00206/02 00597/12 00620/12 00642/12

BDSCL 00707/12 00546/12

BDSCO 00702/12 00528/12 00535/12

BEQT# 00701/12 00476/12

BEQTB 00700/12 00479/12

BFLAG 00418/07 00348/06 00387/06

BGBND 00633/09 00004/09 00388/09

BGSPL 00241/10 00236/10

BHMSK 00716/12 00207/02 00613/12

BIDNT 00172/03 00316/03 00416/04 00321/08 00529/09

BIT14 00403/07 00389/06

BLANK 00305/02 00103/06 00133/06 00300/06 00342/06 00377/06 00449/06
00055/07 00137/07 00143/07 00178/07 00187/07 00229/07 00170/08
00227/10 00442/10

BLAST 00281/03 00434/10

BLNKS 00280/03 00154/08 00160/10 00260/10

BLRET 00143/07 00127/07

BLST 00168/03 00379/03 00420/04 00425/04

BPAGE 00659/09 00225/09 00422/09

BPOUT 00122/10 00162/02 00129/10 00139/10

BPSCN 00074/11 00427/10 00044/11 00089/11

BPSRC 00585/09 00595/09

BPSYO 00131/10 00143/10

BSBAD 00519/03 00076/09 00107/09 00109/09 00112/09 00124/09 00130/09
00201/11

BSEND 00120/09 00084/09

BSLD 00083/09 00089/09 00093/09 00097/09 00118/09

BSPAD 00520/03 00074/09 00114/09 00189/11

BSSDP 00234/03 00536/10 00190/11

BSTAT 00640/12 00628/12 00652/12

BSYBF 00699/12 00545/12

BSYSC 00703/12 00539/12 00540/12

BUDSC 00706/12 00541/12 00542/12 00544/12 00549/12

BUFCL 00386/02 00394/02 00465/04 00323/05 00345/05 00090/06 00280/06
00498/06 00035/07 00343/07 00147/08 00336/08 00261/09 00271/11
00402/11

BUFUL 00426/07 00128/07 00139/07 00276/07

BUMP 00028/07 00022/07 00024/07

BUNTS 00704/12 00548/12

C.XX 00534/03 00433/06 00437/06 00561/08 00566/08

CARET 00275/03 00158/04

CDEC 00536/03 00418/06 00546/08

CEQT 00348/02 00270/06 00462/06 00521/06 00474/07 00478/08 00272/09

•CHAN 00057/04

CHANL 00668/12 00199/02 00430/12 00484/12 00502/12 00508/12 00518/12 00566/12

CHARD 00401/07 00317/06 00354/06

CHARR 00402/07 00356/06

CHAVR 00406/07 00322/06

CHCMD 00310/02 00555/02 00033/12

•CHECK 00541/02

CHERR 00057/07 00049/07 00053/07

CHJMP 00274/04 00188/02

CHKSM 00449/02 00457/02 00475/09 00570/11

CHR$C 00404/07 00560/06

CHR$S 00605/09 00280/08

CHRAB 00030/08 00455/07

CHREN 00029/08 00453/07

CHREQ 00028/08 00451/07

CHRIC 00405/07 00003/07

CHRTR 00606/09 00284/08

CHSET 00366/04 00274/04

CHSUM 00600/11 00571/11

CIDNT 00525/03 00322/08 00530/09 00019/10 00026/10

CINT 00354/02 00090/07 00284/09

CISCN 00557/06 00001/07 00005/07 00010/07

CLBPS 00094/10 00080/10

CLDBU 00306/06 00301/06

CLEAR 00488/11 00208/12

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#CLOCK 00558/03

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CNFG4 00507/12 00492/12

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COMPT 00187/03 00317/04 00287/09

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 DBL6    00023/11 00553/10

 DBL7    00050/11 00042/11

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 DBLR    00094/05 00540/04

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 DENTR   00384/10 00311/10

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DMAR 00317/04 00313/04

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*JBINS 00554/03

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*JFLSC 00002/04

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PRTXT 00158/12 00170/12 00189/12 00197/12

PSET 00127/12 00121/12

PSKP1 00149/12 00205/12

PT.DV 00458/05 00443/05

PTDV. 00476/04 00468/04

PTERM 00381/07 00100/06 00289/06 00507/06 00044/07

PTISS 00181/12 00117/12

PTRK 00471/11 00414/11 00430/11 00444/11 00458/11

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 PTUN    00442/05 00434/05

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 PV1     00146/12 00123/12

 PV2     00151/12 00125/12

 QLOOP   00137/12 00142/12

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 RANAD   00246/03 00102/03 00138/03 00144/03 00146/03

 RBTAD   00152/03 00554/10

 RCERR   00525/04 00499/04 00507/04 00025/05

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 RDCMX   00081/12 00040/12

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         00537/10 00538/10 00558/10 00348/11 00349/11

 RELBT   00463/12 00439/12 00656/12

 RELDF   00656/12 00446/12 00449/12 00461/12

 REMDO   00375/11 00166/02 00378/11 00380/11

 REPLY   00342/05 00155/02 00164/04 00175/04 00186/04 00200/04 00213/04
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         00322/04 00340/04 00349/04 00358/04 00352/05

 REPNA   00071/05 00059/05

 RESCN   00288/07 00178/02 00305/07

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*RQP7   00034/04
*RQP8   00035/04
*RQRTN  00026/04
 RSCTR  00472/11 00425/11 00447/11 00450/11 00452/11
 RSYSC  00719/12 00538/12
 RTGEN  00148/04 00146/02
*RTRK   00067/04
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 SAVMT  00358/02 00151/04 00444/05 00462/05 00519/05
 SBLBL  00221/03 00471/09
 SCCNT  00586/03 00344/09
 SCNBP  00581/09 00171/02 00588/09
 SCND   00189/03 00224/04 00343/09
 SCNTR  00474/11 00427/11 00435/11 00442/11
 SCODE  00180/03 00168/04 00326/09
 SCOUT  00089/11 00172/02
 SDLA   00593/03 00347/09
 SDSKA  00541/05 00446/04 00619/04
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SETBU 00387/06 00357/06

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SETEN 00002/08 00551/07

SETHD 00524/09 00260/08 00356/08 00447/08 00016/09 00531/09

SETIN 00034/07 00086/07 00459/07 00507/07

SETIX 00178/06 00183/06 00186/06 00188/06

SETLB 00162/06 00101/06

SETMP 00260/10 00253/10

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SETSC 00716/11 00196/02 00025/12

SETYP 00138/06 00134/06

SEXT 00499/10 00489/10

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SKCMD 00679/12 00596/12

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SLINK 00142/08 00176/02 00177/02 00159/08 00163/08 00177/08

SLOAD 00582/12 00638/12

SLST 00372/02 00444/04 00617/04

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SORT2 00562/04 00572/04 00579/04 00594/04

SORT3 00581/04 00570/04

SORT5 00596/04 00566/04

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00252/04 00262/04 00277/04 00286/04 00305/04 00319/04 00329/04
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SSSAV 00346/02 00335/04 00296/09

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STATC 00316/02 00003/03 00044/12

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*SXSUS   00090/04
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 SYLM    00362/07 00500/09 00501/09
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 SYSBF   00567/03 00317/09 00337/09 00454/09 00483/09
 SYSBT   00660/09 00244/09 00314/09 00463/09
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TBG 00557/03 00291/09

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UDSC 00183/03 00269/04 00328/09

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ULPAR 00282/03 00311/11

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URMAN 00618/09 00307/08

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